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The Croonian Lectures

ON

THE CHEMICAL CORRELATION OF THE FUNCTIONS OF THE BODY.

Delivered before the Royal College of Physicians of London on June 20th, 22nd, 27th, and 29th, 1905,

BY ERNEST HENRY STARLING, M.D. LOND., F.R.S.,

FELLOW OF THE COLLEGE; JODRELL PROFESSOR OF PHYSIOLOGY, UNIVERSITY COLLEGE, LONDON.

LECTURE II.[1]

Delivered on June 22nd.

THE CHEMICAL REFLEXES OF THE ALIMENTARY TRACT.

MR. PRESIDENT AND GENTLEMEN,—With the first appearance of multicellular animals and the setting apart of a distinct layer of cells, the hypoblast, for digestion and assimilation the activity of the cells is at first largely analogous to that of the previous unicellular organisms, each cell of the alimentary epithelium seizing and ingesting the food particles which reach the cavity of which the cells are a lining. The digestion is therefore at first largely intracellular and the ingestion of food particles must be determined partly by chemical and partly by tactile or mechanical stimuli arising in the food particles themselves. In the lowest of metazoa, however, cells are found which exercise their influence on external organisms by the production and excretion of poisonous material and a similar mechanism is soon evolved in the alimentary tract for the production of digestive fluids. An elementary type of digestive apparatus would therefore be a cavity lined with epithelial cells which are stimulated to the secretion of digestive juices by the chemical and mechanical stimuli arising from food which has been introduced into the cavity. The increase in these digestive cells necessitated by the greater bulk and greater activity of the animal arising with the elevation in type is procured in all the higher animals by the formation of outgrowths of cells from the lumen of the alimentary canal, outgrowths which give rise to the structures which we know as glands. The cells composing these glands are no longer subject to direct stimulation by any food present in the alimentary canal. Each act of secretion of digestive juices must therefore involve the transmission of a message of some sort or other from the lining epithelium of the alimentary canal to the gland in question—a transmission which is apparently analogous in all respects to the mechanism for the production of movements in response to external stimulation. In the higher animals all the motor reactions affecting skeletal muscles are carried out by reflex actions and involve the coöperation of the central nervous system. It is natural to suppose that the similar reactions affecting the chemical activity of glands should be carried out in the same way and the earliest investigations of the influence of the nervous system on glandular activity corroborated in all respects this supposition. The taking of food into the mouth, for instance, is at once followed by a flow of saliva due to an induced activity of the various salivary glands. This reaction was studied by Ludwig in the first half of the last century and the experiments of this investigator showed conclusively that the normal path for the message from mucous membrane of mouth to gland lay through the central nervous system. The nerves involved in the reflex secretion of saliva were determined, as well as their central connexions. In such a case as this, where all kinds of material—dry, fluid, pleasant, or harmful—may be taken into the mouth, a rapid response of the salivary glands is necessary to provide for the speedy swallowing of the food or to facilitate its expulsion from the mouth. When the food has once undergone a preliminary warming and moistening in the mouth and has been passed, so to speak, by the critical organs of taste and smell placed at the commencement of the alimentary tract a rapid reaction of the other glands of the alimentary canal—i.e., one occupying fractions of a second—would not seem to be absolutely necessary. The predominant part, however, played by the central nervous system in all the most direct reactive phenomena of the body led physiologists to search for similar reflex nervous mechanisms of secretion through the rest of the alimentary canal, and the firm faith that such nervous mechanisms existed was in no way damped by the difficulties experienced in the attempts to determine their existence and their paths. Thus for many years the only known method of exciting gastric secretion was the introduction of irritant substances into the stomach, apart, that is to say, from the taking of a meal which would excite in physiological fashion a secretion of gastric juice. In the case of the pancreas Heidenhain observed on a few occasions a scanty secretion from stimulation of the medulla oblongata but could not obtain this result at will. Succus entericus was obtained by some observers from intestinal fistulæ by mechanical stimulation of the mucous membrane and the so-called paralytic secretion of succus entericus was produced in certain circumstances in a denervated loop of intestine.

These were the sole indications of any influence of the nervous system on the secretions below the mouth until the subject was taken up by Pawlow at St. Petersburg. This observer realised that the last word could not be said on any physiological question until experiments had been made on an animal in an absolutely physiological condition—i.e., with normal blood pressure, free from fear or pain, and unpoisoned by anæsthetics. To effect this aim Pawlow has enriched physiologists with a new technique. By the exercise of scrupulous asepsis, and aided by his great surgical skill, he has succeeded in making observations on the digestive process in animals by providing them with fistulous openings into different parts of the alimentary canal, or with culs-de-sac which were in nervous and vascular continuity with the rest of the canal and whose activity could be taken as samples of the activity of the whole organ from which they were cut off. The results obtained by this physiologist seem at first to point to an extension throughout the alimentary canal of processes similar to those occurring in the mouth and to prove that every gland in the canal is excited reflexly through the central nervous system by the presence of the foodstuffs in different stages of digestion at the appropriate part of the lumen of the canal.

Thus the mere sight of food or the taking of pleasant food into the mouth excites reflexly through the vagi a reflex secretion of gastric juice and this secretion can be also evoked by artificial stimulation of the peripheral end of a cut vagus. The passage of acid chyme, of water, or oil, from the stomach into the duodenum excites the flow of pancreatic juice, the efferent channels, according to Pawlow, for the reflex being both the vagi and the splanchnic nerves, since secretion of pancreatic juice can be evoked by stimulation of either of these nerves. The secretion of succus entericus is less distinctly due to the intervention of a distant nervous system, since it is evoked in two circumstances—namely, (1) mechanical distension of the gut; and (2) introduction of inert pancreatic juice.

Previously to the publication of Pawlow's results no physiologist had succeeded in obtaining an invariable secretion of either gastric or pancreatic juice as the result of stimulation of any nerves. A few years after the description by Pawlow of the production of pancreatic secretion by stimulation at some point in the long reflex path—viz., from intestinal mucous membrane, through medulla and vagus or splanchnics to pancreas—it was shown by Wertheimer in France and by Popielski in Russia that the introduction of acid into the duodenum evoked a reflex flow of pancreatic juice even after division of the vagi and splanchnics or complete destruction of the spinal cord. These observers, therefore, regarded the reaction as belonging to the type of peripheral reflexes, the centre being located by them in the ganglion cells, somewhere in the wall of the intestine or the pancreas itself. Previous observations by Bayliss and myself had shown that the normal peristaltic movement of the intestine was a peripheral reflex, the paths of which lay wholly within the walls of the alimentary canal; and we were therefore interested to determine the conditions of the similar supposed reflex affecting the glandular activity of the pancreatic outgrowth of the canal. A few experiments sufficed to show that the so-called peripheral reflex secretion of pancreatic juice evoked by the introduction of acid into the duodenum or upper part of the small

[1] Lecture I. was published in THE LANCET of August 5th, 1905, p. 339.

intestine occurred absolutely independently of any nervous channels whatsoever and that it was possible to isolate the pancreas from the duodenum, to divide all the nerves going to a loop of the small intestine, and then by injection of acid into this loop to evoke secretion of pancreatic juice. Further observations showed us that the reaction instead of being nervous was in reality a chemical one. The entry of acid into the duodenum or upper part of the small intestine causes the production in the mucous membrane of a chemical substance which we call secretin. Since, as I shall show later, there are other secretins, we may speak of this as the pancreatic secretin. This pancreatic secretin is rapidly absorbed into the blood and travels with the blood to the gland, the cells of which it excites to secrete.

In order to obtain secretin the method we have always adopted has been to scrape off the mucous membrane of the duodenum and upper two feet of the small intestine, to pound this up in a mortar with sand with the addition of 0·4 per cent. hydrochloric acid and then to boil the mixture over a free flame, the liquid when boiled being neutralised with caustic potash. All the proteids of the decoction are precipitated and if the mixture be thrown on a filter a clear fluid filters through. This fluid contains the secretin. In order further to free it from traces of gelatin and proteid it may be precipitated by absolute alcohol and ether; the secretin is not thrown down and can be recovered from the alcohol-ether solution by evaporation of the latter. A few cubic centimetres of the original filtrate from the boiled mucous membrane or of a watery extract of the residue left on evaporating the alcohol-ether solution on injection into the veins of an animal evoke a plentiful secretion of clear pancreatic juice which can be collected by means of a cannula placed in the duct of the gland. The secretin can be obtained in this way from the upper part of the intestine of any member of the vertebrata and a solution of secretin obtained from any animal will on injection into any other animal evoke a secretion in the latter of pancreatic juice. We have, therefore, in secretin a substance of the same general distribution as adrenalin, which, like this latter, is unaltered by boiling, is soluble in alcohol, and, as we have determined by direct experiments, is more or less diffusible. Although secretin has not been further isolated and we have therefore no clue as to its chemical characters there can be little doubt that it belongs, like adrenalin, to the drug class of substances which exercise an influence on the physiological workings of the body. The limited seat of production of secretin and the definite response evoked by its injection determine a chemical reflex which is as adapted to the needs of the organism as are the muscular reflexes carried out by the central nervous system. The acid chyme entering the duodenum excites the formation of secretin in the mucous membrane, which in its turn causes a flow of alkaline pancreatic juice. The formation and absorption of secretin will proceed until the chyme is exactly neutralised by the alkaline juice. As soon as this neutralisation occurs the pyloric sphincter, which remains firmly closed so long as the duodenal contents are acid, opens and allows the entry of a fresh portion of acid gastric contents which in their turn will, through the secretin mechanism, call forth a secretion of an exactly corresponding amount of pancreatic juice. It is thus contrived that the further digestion of the foodstuffs in the small intestine will proceed in a medium which is approximately neutral and is at any rate free from any trace of mineral acid.

We may next inquire into the manner in which the contact of acid can give rise to the production of secretin in the mucous membrane. It seems most probable that the action of acid is one of hydrolysis, since although various acids can be used for the preparation of secretin their efficacy is more or less proportional to their strength or rather to their acidity, a weak acid such as boracic having no influence on the production of secretin. Bayliss and I have suggested therefore that the epithelial cells lining the upper part of the small intestine contain a substance, pro-secretin, from which by hydrolytic agents secretin can be split off. This precursor of secretin is quite insoluble since we have been unable to obtain secretin by the actions of acids on filtered extracts of the mucous membrane. It is not destroyed by the death of the cell, since secretin may be obtained by the action of acid upon boiled mucous membrane or upon mucous membrane which has been repeatedly extracted with absolute alcohol and then dried. On the other hand, if the process by which secretin is formed is hydrolytic this change must be able to be effected by the living cells in the absence of such strong hydrolytic agents as dilute hydrochloric acid. Thus Fleig has shown that a secretin similar in all respects to that described can be obtained by the action of soaps on the mucous membrane; and there is no doubt that a similar substance is produced in the mucous membrane and absorbed into the blood when such substances as ether, chloral, or oil of mustard are introduced into the lumen of the gut. It is difficult to imagine that any of these substances can exercise a direct hydrolytic effect and it is certainly impossible by their means to extract secretin from a mucous membrane which has been already killed.

That the secretin formed in the mucous membrane actually gets to the pancreas by way of the blood stream has been shown by Wertheimer. This observer led the blood from the intestinal veins of one dog (A) into the blood stream of a second dog (B) and found that injection of dilute acid into the intestine of dog A evoked a secretion of pancreatic juice in dog B. Although the view given above as to the origin of secretin is most probably correct our failure up to the present to isolate pro-secretin in any way from the mucous membrane forbids us to accept the theory as definitely established. Delezenne has found that digestion of a solution of secretin with a fresh extract of intestinal mucous membrane deprives the secretin of its efficacy. He has therefore advanced the suggestion that secretin is really preformed in the wall of the gut but is accompanied by another body, its physiological antagonist, which he denotes by the name of anti secretin. He imagines that the action of acid is to destroy the anti-secretin, thus unmasking the action of the secretin. The fact, however, that secretin, which is extremely soluble both in water and fairly strong alcohol, is not extracted in any appreciable quantity by these fluids from the mucous membrane until acid has been added is difficult to reconcile with Delezenne's suggestion; moreover, the general characters of secretin, its resistance to proteid-precipitating agents, and so on, point to it as belonging to a class of bodies which would not give rise to anti-bodies when introduced into the organism.

As to the mechanism by which secretin arouses the activity of the pancreatic cells, the expulsion of its preformed ferment or pro-ferments, together with the building up of new protoplasm and ferments which always accompanies normal activity, we have little or no conception. Early in our researches the suggestion was made to us by Dr. A. Walker that the secretion of pancreatic juice was of the nature of the formation of an antibody to the secretin. That this explanation will not hold is shown by the fact that secretin is equally efficacious when it is mixed with a large quantity of fresh pancreatic juice. If, however, the pancreatic juice be activated by the addition of succus entericus so that its trypsinogen is converted into trypsin, it has the power of destroying the secretin. Moreover, as I mentioned in my last lecture, such a localised formation and excretion of an antibody has no analogue among the facts hitherto brought to light by bacteriologists as to the formation of antibodies in general. We are inclined to think that the action of secretin is that of a specific drug—that just as pilocarpin acts on all the glands of the body, including the pancreas, so secretin acts on the pancreas with, perhaps, one or two other glands which are associated with the pancreas in their functions. Its action is not, however, identical with that of pilocarpin. The latter drug induces in the pancreas the secretion of a thick viscid juice containing from 7 to 8 per cent. of solids. Its action is entirely abolished by the injection of a small dose of atropin. On the other hand, secretin produces a juice containing about 3 per cent. of solids, which resembles in every particular the juice obtained from an animal with a pancreatic fistula after it has received food. Its action is not altered in any way by the previous injection of, at any rate, moderate doses of atropin.

The discovery of this chemical reflex which is sufficient to explain the correlation of activities between the mucous membrane of the small intestine and the pancreas must cause us to inquire how far these results are to be reconciled with the previous results obtained by Pawlow. According to Pawlow's original idea the reflex secretion of pancreatic juice was entirely nervous. The question now arises whether both mechanisms function in normal circumstances or whether it is possible to explain all Pawlow's results by the chemical mechanism which I have described. Although we cannot at the present time give a definite

answer to this question we are inclined to believe that the chemical mechanism is the only one involved in the secretion of pancreatic juice and that in all Pawlow's experiments where secretion was excited by the stimulation of nerves such as the vagus or splanchnics the effect on the pancreas was really a secondary one due to movements of the stomach arising as a result of the nerve stimulation and squeezing some of its acid contents into the first part of the small intestine. Other workers, however, such as Fleig and Wertheimer, believed that both mechanisms are at work—namely, that through the mucous membrane of the intestine the pancreas can be excited to secrete by both nervous and chemical means. We ourselves have never been able by nervous means to obtain secretion of pancreatic juice provided that we excluded all possibility of entry of acid into the upper part of the small intestine.

The discovery of this simple chemical nexus between alimentary canal and pancreas suggests at once the possibility of other mechanisms of the same description taking part in the complex chain of events involved in the digestion of our foodstuffs. Investigations on this point, carried out partly in my laboratory and partly by independent observers, have shown this belief to be justified and I propose in my third lecture to deal with the facts at present ascertained which point to a whole chain of such chemical reflexes throughout the alimentary tract.

NOTES ON AFRICAN PYGMIES.

BY G. ELLIOT SMITH, M.A. CANTAB., M.D., CH.M. SYD.,
FELLOW OF ST. JOHN'S COLLEGE, CAMBRIDGE; PROFESSOR OF ANATOMY IN THE EGYPTIAN GOVERNMENT SCHOOL OF MEDICINE, CAIRO; MEMBRE DE L'INSTITUT EGYPTIEN.

With a Note on Intestinal Worms found in African Pygmies by Dr. A. LOOSS, *Professor of Parasitology, the School of Medicine, Cairo.*

DURING their sojourn of the greater part of a month in Cairo the party of six pygmies brought by Colonel Harrison from the Ituri Forest in the Congo Free State lived in the School of Medicine and the adjoining Kasr-el-Aini Hospital where they were treated for the interesting form of ankylostomiasis described by Professor Looss in the note which accompanies this account. During the whole of this time the pygmies practically lived in the anatomical department of the School of Medicine, so that I have had ample opportunities for examining them and studying their behaviour. With the full consent of Colonel Harrison I have made a large series of measurements and have had numerous photographs and skiagrams made. For the excellent series of skiagrams used in this investigation I am indebted to Dr. Khayatt and I have to thank Mr. Herbert M. Nelson Milton for permitting these photographs to be taken in the Victoria Nursing Home.

Although the literature relating to pygmies is now quite voluminous I make no apology for adding these notes, scanty as they are, because they will clear away some of the confusion arising from the many conflicting statements and the errors of observation recorded in the earlier accounts. The arrival of these six individuals has afforded most of us who have seen them the opportunity of becoming personally acquainted for the first time with a race long known to us in fable and what has often been supposed to be a mere tradition as old as the oldest human civilisation—a race, moreover, of the greatest biological interest as being the smallest of mankind. The ancient history of this race has been so often and so fully discussed—whole treatises such as that written by De Quatrefages (1887) have been devoted to the subject—that it would be quite unnecessary to attempt to deal with this aspect of the question at any length. There are, however, one or two of the most crucial problems in the disputed interpretations of these early records that seem to be solved by the information now available.

It is not infrequently supposed that this is the first visit of any members of the true pygmy race to Egypt (or Europe), but this idea is quite erroneous, as everyone acquainted with the writings of Professor Schweinfurth, Sir William Flower, and Professor Stuhlmann must be aware. These little people have been preceded by several parties of their kinsmen within recent years and probably by numerous representatives of their race in ancient times. Professor Schweinfurth discovered (or rather rediscovered after a lapse of two centuries) the Akka pygmies in the Monbuttu country in 1870[1] and obtained from Munza (the king of the Monbuttu) an Akka boy in exchange for a dog. This boy died at Berber on his way to Egypt as the result, so Professor Schweinfurth tells me, of an excessive meal of macaroni. (I should mention here that in the study of these pygmies I have had the help of Professor Schweinfurth who also kindly gave me a most useful photograph of a group of 23 Mbute pygmies taken in their native Semliki forest by Dr. J. David last year.) The Italian traveller Miani was more successful in accomplishing his purpose of sending pygmies to Europe, although he himself succumbed in the effort. In the writings of Professor Schweinfurth and Sir William Flower[2] is a full account of all that Miani's two Akka boys had to submit to at the hands of a swarm of enthusiastic European anthropologists and others in Cairo and afterwards in Verona and other parts of Italy. In 1876 another Italian, Gessi Pacha, who was one of Gordon's lieutenants in the Soudan before the Mahdist rebellion, obtained in the Bahr-el-Gebel a slave girl who was supposed to belong to the Akka race and took her to Trieste, where she was living in 1888 as a servant to Madame Gessi. But according to Mateucci[3] the racial purity of this girl is open to question. In 1893 Dr. Stuhlmann is said to have taken two dwarfs from the Ituri river to Germany.[4]

Amongst the heterogeneous population of Cairo there are found representatives of almost all the Nilotic and even central African tribes. Many of these people have been slaves who have been recaptured from their captors and liberated by the Government's agents. It thus happens that the unclaimed bodies of persons dying in the Kasr-el-Aini Hospital in Cairo which eventually come to the anatomical department of the School of Medicine, include the most varied assortment of Nilotic peoples. Within the last three years the bodies of two small Negroid women, one 1436 millimetres in height and the other slightly smaller, have been dissected in my department. They presented none of the mutilations of face, teeth, and pudenda which are almost invariably—at least, so far as the genital organs are concerned—found in Nilotic Soudanese women; in the proportions of their limbs, the form of their heads and lips, and in many other respects, they closely resembled the Negritoes. But as nothing was known of their provenance and as their noses lacked that peculiar development of the alæ nasi which at that time I imagined to be the invariable characteristic of true pygmies, I came to the conclusion that they could not belong to that group; and as their nature was so uncertain I did not devote to their study that amount of attention which I should have done had I known, as the examination of this group of pygmies has shown me, that their facial features might well be (and probably are) those of true pygmies. However, as a matter of routine I fully examined their skeletons and brains and the students who dissected the bodies have recorded a number of departures from the normal structure of the body. From the characters of the skeletons I believe that these two individuals belonged to the group of Equatorial African pygmies whose osteological features have been described by the late Sir William Flower[5] and Dr. Frank C. Shrubsall.[6] I shall refer to the structure of these individuals further on in this account. I refer to the matter now to indicate the possibility or probability that true pygmies may reach this country by other means than the agency of European travellers.

The fact that some of the pygmy people now live in close proximity to the sources of the Nile and that, according to those anthropologists who have studied the question on the spot, their domain probably extended over a much wider area in former times, renders it highly probable that at various times the ancient dwellers on the banks of that river may have heard, or perhaps even seen, some of these little people in the course of their numerous expeditions to the south. But even if this fact were established with absolute certainty it would not justify us in

[1] Im Herzen von Afrika, 1878, pp. 304 et seq.
[2] Journal of the Anthropological Institute, 1889, p. 88.
[3] "Gli Akkah e le Razze Africane," Bologna, 1877. Quoted by Schweinfurth.
[4] Robert Brown, "The Story of Africa," vol. ii., 1894, p. 37.
[5] Journal of the Anthropological Institute, 1889.
[6] Sir Harry Johnston's "Uganda Protectorate," vol. ii.

concluding, as so many recent writers have done, that every mention of small men in the ancient Egyptian writings referred to real pygmies. On the contrary, we know for certain that at all times in Egyptian history (from the earliest period of which we have any records even up to the present time when His Highness the present Khedive has a dwarf at the Koubbeh Palace who is an honoured sheikh and story-teller) dwarfs have been received with special favour at the court of the ruler of Egypt and have had posts of honour accorded them. Most writers fail to draw a proper distinction between *dwarfs* and *pygmies*—i.e., between those instances of diminutive stature which may occur in any race as the result of pathological causes or, perhaps occasionally, as the mere extreme of variability in size without any definite pathological reason and the smallness which distinguishes a whole population. The diminution of the stature in the former class may be the result of a reduction in size of all parts of the body—true or total nanism or it may be partial—affecting only some parts, so that the body is misshapen and distorted. Many of the representations of dwarfs in the ancient Egyptian wall pictures and statues suggest this partial nanism, but it is quite possible that the idea of the small size and the figure of a dwarf were conveyed by exaggerating the distortion of the body which the actual dwarf presented. Size of body in an ancient Egyptian picture was so often used to represent relative importance of individuals that the mere diminution in size would not necessarily convey the idea of a dwarf, so that something more was necessary—some distortion of the body—to suggest nanism in a picture. It is quite possible that this may be the explanation of the representation of all dwarfs as exhibiting the misshapen head and form of one particular variety of nanism. Perhaps the best Egyptian representation of a dwarf is the statue of the dwarf Khnumhotpu in the Cairo Museum (represented also in Maspero's "Dawn of Civilisation," p. 280). In this statue the idea of "dwarfishness" is conveyed by the plumpness of all parts of the limbs and body and the shape of the head. Professor Maspero, the director-general of the Egyptian Service des Antiquités, tells me that a careful study of all the passages in ancient Egyptian literature which have been supposed to refer to pygmies fails to reveal a single instance of a description which can justify such a belief. The determinative invariably applied to these supposed pygmies is a hieroglyphic sign representing the misshapen figure expressive of partial nanism. Professor Maspero refuses to admit that this hieroglyph may be a conventional sign applied to all persons of diminutive stature. It seems to me highly improbable that all dwarfs should possess a figure in any way resembling the sign invariably used to indicate "dwarfishness"; and if this sign can be applied to a well-proportioned dwarf may it not also be used to indicate a pygmy? I make this suggestion only because it offers a possible explanation of a passage which may be the first historical record of the true Negritoes of Equatorial Africa. In Professor Schiaparelli's memoir, "Una Tomba Egiziana inedita della VI^{a} dinastia," published in Rome in 1893 (for my information regarding this memoir I am indebted to the writings of Maspero, Keane, and Sergi), there is an account of some small people brought to Egypt about 3000 years B.C., which is difficult or impossible to explain unless we admit that it refers to the real pygmy Negritoes.

Somewhere to the south of Egypt was the far-famed land of Punt, a geographical term which has received innumerable explanations. It is clear, however, that it was some African territory far away to the south of Egypt from which negro people came. Professor Maspero tells us that "all that lay beyond Punt was held to be a fabulous region, a kind of intermediate boundary land between the world of men and that of the gods, the 'Island of the Double,' 'Land of the Shades,' where the living came into contact with the souls of the departed." Following the accounts given by Schiaparelli, Erman, and himself, Professor Maspero continues the story in the following most significant sentences: "It [the "Land of the Shades" beyond Punt] was inhabited by the Dangas, tribes of half-savage dwarfs, whose grotesque faces and wild gestures reminded the Egyptians of the god Bes. The chances of war or trade brought some of them from time to time to Punt or among the Amamiu [the people around Wady Halfa]; the merchant who succeeded in acquiring and bringing them to Egypt had his fortune made. Pharaoh (King Assi of the fifth dynasty—about 3300 B.C.) valued the Dangas highly, and was anxious to have some of them at any price among the dwarfs with whom he loved to be surrounded; none knew better than they the dance of the god—that to which Bes gave way in his merry moments. Towards the end of his reign Assi procured one which a certain Biûrdidi had purchased in Punt. Was this the first that made his appearance at court, or had others preceded him in the good graces of the Pharaohs? His wildness and activity, and the extraordinary positions which he assumed, made a lively impression on the courtiers at the time and nearly a century later there were still reminiscences of him."[7] 70 years after King Assi "an officer, Heru-Khuf,' was sent by Pepi II. (sixth dynasty) to bring back a pygmy alive and in good health from the land of great trees away to the south." "That the Danga came from the South we know from a later inscription at Karnak, and that the word meant dwarf is clear from the accompanying determinative of a short person of stunted growth."[8]

The whole of this account seems to me to be a perfectly straightforward and indubitable reference to the pygmies. But Professor Maspero says the determinative used shows that a *dwarf* and not a *pygmy* is referred to in this account. But we cannot have "a race of dwarfs" because a race of small people can only be pygmies and if the determinative used in this connexion is that of a distorted body this is conclusive proof of the suggestion, which I have already made above, that the same determinative is applied equally to the subjects of partial and complete nanism as well as to pygmies. Then, again, if this Danga was so highly estimated and "placed among the dwarfs" and remembered for nearly a century afterwards, he could not have been an ordinary dwarf; nor is there any obvious reason why they should have specially sent a long distance to the southern land to obtain a mere dwarf. Dwarfs are so common in every population, and certainly not less so in Egypt,[9] that one cannot believe all of these remarks can have been applied to any kind of dwarf but must refer to a pygmy. Professor Maspero offers the further objection that the time which it took—two months by water—to reach Egypt from the Danga's country (beyond the land of Punt) is not nearly sufficient to cover a journey from the present habitat of the pygmies to Egypt. It is not easy to estimate how far this would remove the pygmy country from Egypt. That it was a long way off is probable from the rarity of Dangas in Egypt and the fact that the Dangas obtained in the fifth and sixth dynasties were only stray individuals who had reached the land of Punt or the country of the Amamiu. Then, again, we must not forget the probability that the territory occupied by the pygmies extended much further north in those times than now. I suppose that no one now has any doubt of the essential accuracy of the very detailed and circumstantial account of the pygmies and the geographical features of their country given by Herodotus in the oft-quoted description of the voyages of the adventurous Nasamonians in search of the source of the Nile.[10] My friend, Mr. J. I. Craig, of the Egyptian Survey Department, tells me that the only river which corresponds to the description given by the Nasamonians is the Sobat. If this is so and the habitat of the pygmies reached as far as the Sobat in the third century B.C. one is quite prepared to learn that it extended much farther north in the remote time of the sixth Egyptian dynasty. These speculations are, however, quite futile if we refuse to admit that the very definite and precise reference to the Dangas in Schiaparelli's work is an account of the real pygmies. In the Greek and Roman classical writings there are numerous references to the pygmies, which in the works of Herodotus and Aristotle become so definite and exact that there can be no doubt as to their meaning.

The Englishman Andrew Bat'el, of Leigh in Essex, described the pygmies which he saw in Angola at the end of the sixteenth century as "little people called *Matimbas*, which are no bigger than Boyes of twelve years and very thicke"; and nearly a century later the Dutch geographer Dapper published the first account of the Akka pygmies under the name Bakke Bakke from reports which he had received from a fellow-countryman trading on

[7] Maspero's Dawn of Civilisation, pp. 397 and 398.

[8] Keane's Man, Past and Present, p. 118 (quoting from Schiaparelli's Memoir).

[9] During the few weeks of the pygmies' stay in Cairo I saw three fully grown dwarfs all much smaller than these pygmies.

[10] See Flower, op. cit., quotation from Herodotus, Book II., 32, Rawlinson's translation, p. 47.

the Guinea Coast. These accounts met with little credence at the time and at the beginning of the nineteenth century these stories with those of the classical writers were relegated to the domain of fairy tales. With the growth of a fuller knowledge of natural history and of a more critical inquiry into the facts of nature and the records of history all of these reports were "explained away" as mere travellers' tales or as highly coloured accounts of tribes of apes and monkeys. But from the middle of the nineteenth century onwards numerous travellers in various parts of Equatorial Africa and its neighbourhood began once more to record reports which they had heard of diminutive races of men. Dr. Touchard (1861) and Admiral Fleuriot de Langle (1868) described the rapid extinction of a pygmy race in the Gaboon region. M. Paul du Chaillu (1867) in penetrating the forest behind the French possessions in West Africa came upon a pygmy race in Ashongoland between the Gaboon and Congo rivers. Speke and, at a later period, Stanley (1876) heard of the Batwa or Watwa pygmies along the upper waters of the Congo, whom Lieutenant Wissmann and Dr. Wolff met and described in 1887.

The Akka dwarfs seen by Dapper were rediscovered by Professor Schweinfurth two centuries later (1870) and have been seen by the Italian geographer Miani, by Emin Pasha and Stanley, by Stuhlmann and several others. Several of these people have been studied both in Africa and in Europe, and the skeletons of two of them, sent to England by Emin Pasha, have been fully described by the late Sir William Flower. The late Sir Henry Stanley, and more recently Sir Harry Johnston and Dr. David have seen the Mbute (Bambute, Wambutti) pygmies. They are said to live in a territory further west, near the Uganda frontier; but it is very doubtful whether there is any distinction between the Akkas and the Mbute. Stuhlmann says that among the neighbouring tribes the name Akka is often applied to the Mbute. When I questioned the chief of Colonel Harrison's party as to the name of his people he called them "(M)Akkaba." It is highly probable that the names Mbute, Akka, and Batwa are little more than geographical terms without any ethnological significance. In his work on the "Uganda Protectorate" Sir Harry Johnston gives a very full account of the pygmies and describes a more widely scattered negroid population composed of small people scattered amongst the larger negroes. These he calls the "pygmy-prognathous" group and regards as distinct from the true pygmies, although Dr. Shrubsall, who has written a report on Johnston's anthropological data, considers that they exhibit signs of affinity with the pygmies. As Sir Harry Johnston describes the unions which take place between men of neighbouring tribes and pygmy women it is perhaps not surprising to find a scattered population of small negroids beyond the pygmy domain.

The age of the individuals.—In discussing the size and relative proportions of the body in pygmy people the question of the age of the individuals studied is of the utmost importance, for all our conclusions may be vitiated if we treat the mensurations of children as those of adults. It is therefore desirable to study the problem of the determination of the ages with the utmost care. As the people themselves have no ideas whatsoever of their age and the statements made concerning them are obviously mere guesswork of the crudest description,[11] we can at the outset put aside all preconceived ideas as to their ages and study the question on the evidence afforded by the state of their teeth and bones. The value of the evidence afforded by the teeth is not so great as that of the osseous tissues, because the dates of eruption of the former are liable to great variation. There is no doubt that there is a definite tendency amongst the African people for the teeth to cut the gums at an earlier period than in Europeans. It is difficult to obtain definite information in support of this contention because so few people in Egypt and the neighbouring countries have any idea of their exact ages or of those of their relatives. It is a common occurrence for the third molar teeth in Egyptians to cut the gums before the eighteenth year and cases in which these teeth had erupted as early as the fourteenth (and even the thirteenth, according to Dr. Harold Nolan) year have been met with. With reference to the second molar teeth I am unable to make any statement as to the date of eruption from my own knowledge, but my friend, Dr. Nolan, who has had occasion frequently to examine the teeth for medico-legal purposes, has the idea that these also (and, in fact, all the teeth) are precocious, judged by the European standard. The difficulty of ascertaining the exact age in all except the rarest cases has so far rendered it impossible to make any more definite statement regarding this important subject.

The party of pygmies with whom we are at present concerned consists of six individuals, four of whom are males and two females. Of the men only one—the chief, Bohani (or Morgany)—had cut his wisdom teeth and that had happened many years ago. He had lost many of his front teeth: his third molars had the same form and were almost as large as the other molars. He had a long oval palate and the teeth were big. The youth Mafutiminga had not yet cut his third molar teeth. His molars were bigger than those of the others. There was a large gap, 6·5 millimetres, between the two median incisors placed chiefly on the left side of the mesial plane. Judged by the Egyptian standard there is the possibility that a youth who had not cut his third molar teeth may not yet be 18 years of age, if as much. The third male, named Matuha, had not yet cut any of his wisdom teeth and the boy Mongungu had not only not cut his wisdom teeth but the crowns of the second molars were elaborately sculptured and obviously new as though recently erupted and the gums around these teeth were still red from the irritation caused by the tooth breaking through. In Europeans this is supposed to take place in the twelfth year. There was a distinct hiatus between the canine and second incisor teeth, which probably indicated that the canine had not yet been pushed up to its full height. In other words, the canine which cuts the gum during the eleventh year in Europeans had not yet finished growing—i.e., had only recently erupted in this boy. So that even judged by the European standards the evidence of this boy's teeth points to the fact that he is no more than 12, or perhaps even 11, years of age. Of the two females, one—Amooriape—is an old woman with a complete set of well-worn teeth; in fact, judged by her teeth she is much the oldest of the party and may be 40 or 50 years of age. The other woman—Kuarhe—also has a complete set of teeth, but her third molars appeared to have only recently erupted. With the object of throwing further light upon the problem of the determination of their ages Dr. Khayatt made skiagrams of the hands and wrists of the whole party and of the elbow in the cases of Matuha and Mongungu. It had been our intention during the last few days of the pygmies' stay in Cairo to submit all parts of the skeletons (of all of them) to examination by the Roentgen rays, but the interruptions caused by their treatment for ankylostomiasis and their sudden departure two days before it was expected interfered with this plan. At the same time, we have been able to obtain sufficient data to enable us to estimate their age by European standards. In the cases of the man Bohani and the old woman Amooriape the bones of the hand and wrist were perfectly ossified, but in the other four individuals the skeleton exhibited various stages of immaturity.

I shall begin with the consideration of the youngest of the party, Mongungu. Skiagrams show that the proximal extremities of all the phalanges of both hands are still widely separated from the shafts. The proximal end of the metacarpal of the thumb is separated from the shaft by a gap of a similar extent to that of the phalanges. In this respect it presents a marked contrast to the epiphyses for the heads of the other four metacarpals, the line of separation of these from their shafts being hardly visible in the right hand and not at all—if we ignore some doubtful traces of the epiphyseal line in the second and third metacarpals—in the left hand. If these epiphyses have really joined their shafts—there is, of course, the possibility that a slight obliquity of the bones may have caused the narrow epiphyseal gap to be hidden—it is a most extraordinarily precocious development; but it cannot be distinctive of all pygmies (at any rate, the date of union cannot be so very early) because in the much older boy Matuha the epiphyseal gaps in the metacarpals are distinct in the left hand although they are almost closed in the second, third, and fourth metacarpals of the right hand. In Matuha's right hand the epiphysis of the fifth metacarpal seems to be perfectly fused to its shaft, although the epiphyseal gap is quite open in the corresponding finger of the left hand. All of the phalangeal and metacarpal bones in Mongungu's hands still retain their infantile shapes and in this respect present a marked contrast to all the other

[11] A boy of the party who had not reached the state of puberty and whose gums were still red from the irritation caused by the eruption of the second upper molar teeth was said to be 18 years of age.

members of the party. The bones of the carpus have not yet attained their perfect forms and their density is much less than the carpalia of the other pygmies. The pisiform is represented by a shadow four millimetres in diameter, the edges of which are ill-defined, whereas the corresponding diameter in the man Bohani is 11 millimetres and its edges are sharply defined. This bone is obviously in a process of ossification in Mongungu and according to Debierre (quoted by Professor Arthur Thomson in Cunningham's "Textbook of Anatomy," p. 203) this takes place approximately in Europeans between from 10 to 12 years of age. Both epiphyses of the radius and the lower epiphysis of the ulna are widely separated from their respective diaphyses. I am unable to determine whether the epiphysis for the olecranon process is present. The most interesting feature in the lower end of the humerus is the presence of the small separate nodule representing the external condyle, which in Europeans develops and fuses with the capitellum in the twelfth year. The internal epicondylar and the capitellar epiphyses are separate but it is not certain whether the trochlear centre is present. All the evidence of the humeral epiphyses, of the state of the pisiform, of the infantile forms of the bones of the hand, and of the state of the teeth indicate Mongungu's age as being 12 years if we adopt the European standard of tooth and bone development. If the pygmy standard is different it is in the highest degree probable that a race which is certainly more primitive than the European and is composed of individuals of small stature will come to maturity at a period of life which is certainly not later; and it is quite possible or even probable that they may mature at an earlier age. In other words, the maximum limit of Mongungu's age is 12 years and there is always the possibility that he may be considerably less. His whole appearance agrees with this estimate. His genital organs are still infantile. He has not yet developed any pubic or axillary hair. Nor does he exhibit that shame in exposing his naked body which is apparently so acutely felt by the other members of the party.

Like Mongungu, neither Matuha nor Mafutiminga has been circumcised, Bohani (the only bearded member of the party) being the only one circumcised. Sir Harry Johnston has made the statement that "the males of all the Congo pigmies seen by [him] were *circumcised*."[12] This is clearly not a universal rule among the people; but it is curious that the only one of this party to be circumcised should also be the only one whose bones have reached a state of maturity. This naturally suggests that circumcision may possibly be done as part of the initiation into manhood. But both Matuha and Mafutiminga have reached the age of puberty, as the state of their genital organs and the growth of pubic and axillary hair show; and the latter is said to be the husband of the woman Kuarhe. So that there is nothing to show that the rite of circumcision has any definite significance among these people. The most important piece of evidence as to the age of Matuha is afforded by the internal epicondyle of the humerus, which is still separate. In Cunningham's "Text-book of Anatomy" Professor Arthur Thomson says in one place that this epiphysis fuses with the shaft at 17 or 18 years and elsewhere on the same page (189) he puts it at 18 or 19 years; in Quain's "Anatomy" Professor Thane puts it at 18 years. This would apparently make 18 years as the age limit of Matuha. On the other hand, the head of the radius seems to be perfectly fused to the shaft. Professor Macalister in his text-book (p. 149) says that this takes place at 16 years, Professor Thane puts it at 17 or 18 years, and Professor Thomson allows from 18 to 20 years. According to these estimates Matuha is at least 16 years but may be as much as 20 years of age but the state of the humerus cuts one or two years off the latter estimate. The lower epiphyses of the ulna and radius are, of course, still separate. The proximal epiphyses of the first and second phalanges are still separate, while those of the ungual phalanges appear to be in the act of fusion. These epiphyses may join at any time between 18 or 20 years.

The conclusion to be drawn from these figures is that Matuha (if judged by European standards) would certainly be more than 16 years of age and less than 18 (adopting Thane's figures) or at most 19 years (if we accept Thomson's dates). The probability is that he is not more than 17 or at most 18 years, an inference which is possibly supported by the absence of the third molar teeth. If this is so the ossification of the metacarpus is unusually precocious, though not nearly to such an extent as Mongungu's.

In the case of Mafutiminga, whose third molar teeth have not yet erupted, I have only the evidence of the hand and wrist to go on. The lower ends of the radius and ulna are in the same condition as Matuha's—i.e., the epiphyses are separated from the shafts; the proximal ends of the first and second phalanges are still unjoined, whereas the third phalanges seem to be completely ossified. The epiphyseal line is still visible at the base of the metacarpal of the thumb but whether it is present or absent at the distal ends of the other four metacarpals is doubtful. All of this evidence so closely coincides with that relating to Matuha that any conclusion drawn from the data at my disposal in the case of one must also apply to the other.

In the case of the young woman Kuarhe the hands seem to be fully ossified but the lower epiphyses of the radius and ulna are still separate. Very different estimates of the age at which union takes place in these bones have been given by various writers; the fusion in the case of the radius is said to take place at 19 years (Macalister), about 20 years (Thane), or from 20 to 25 years (Thomson), and in the case of the ulna at 20 years (Thane and Macalister) or 20 to 23 years (Thomson). If we accept Macalister's figures this young woman, even when judged by European standards, is not more than 19 years but according to the estimates given by Thomson there is a bare possibility of her age being as much as 23 years. At the same time there are grounds for the belief that females reach maturity at an earlier age than males, an additional reason for adopting the lower estimate in this case.

We have no standards by which to estimate the ages of the man Bohani and the woman Amooriape. The former looks like a man in the prime of life and might be any age between 30 and 40 years. The woman looks much older than the man and yet she does not exhibit any pronounced signs of senility. Although both the women spent the greater part of a month in Cairo the matron of the Kasr-el-Aini Hospital tells me that neither of them menstruated during that period.

Name.	Sex.	Height.	Weight.
Bohani	M.	1·367 metres.	7 st.
Mafutiminga	M.	1·378 ,,	7 st.
Matuha...	M.	1·311 ,,	4 st. 11 lb.
Mongungu	M.	1·158 ,,	3 st. 7½ lb.
Amooriape	F.	1·286 ,,	3 st. 11½ lb.
Kuarhe...	F.	1·334 ,,	5 st. 6½ lb.

The average height of 38 Akka pygmies from the Monbuttu country is given as 1·378 metres by Deniker[13]: a series of 30 Akkas measured by Emin Pasha yielded an average height of 1·36 and a series of 98 Watwa pygmies measured by Dr. Wolff gave an average of 1·42 metres.[14] The average height of six male Mbute pygmies measured by Sir Harry Johnston[15] was 1·452 metres and the two women measured yielded the figures 1·292 metres and 1·427 metres. From these figures it will be seen that the two fully grown pygmies in Colonel Harrison's party are small even for pygmies. In fact, the young woman Kuarhe and the young man Mafutiminga are taller than the adult representatives of their respective sexes, although there is still a possibility that they may have not yet finished adding to their stature.[16] In Europeans the average weight in males is doubled between the ages of 12 and 24 and onwards,[17] so that the estimate of 12 years as Mongungu's age and his weight and that of Bohani tally with these figures.

The average weight of a European youth at 18 or 19 years is almost that of a fully grown man. This quite supports the estimate of Mafutiminga's age, although he is a very heavily built, clumsy youth who, when fully grown, will probably be much bigger and heavier than Bohani. The size and weight of Matuha suggest that he is not nearly fully grown and incline to the view that even 18 years is an exaggerated estimate of his age. The average weight of a boy of only 17 years is considerably greater than that of a

[12] Uganda Protectorate, vol. ii., p. 538.

[13] "The Races of Man," Appendix, p. 577.
[14] Deniker, op. cit., p. 456.
[15] Uganda Protectorate.
[16] Donaldson, "The Growth of the Brain," p. 80.
[17] Donaldson, p. 51.

TO ILLUSTRATE DR. G. ELLIOT SMITH'S PAPER ON "AFRICAN PYGMIES."

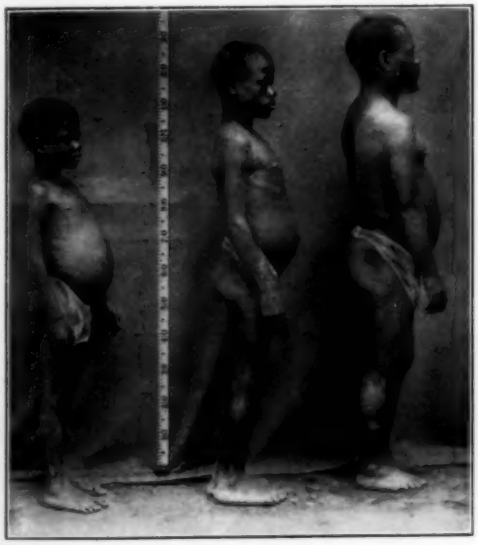
FIG. I.

MONGUNGU MATUHA BOHANI

FIG. II.

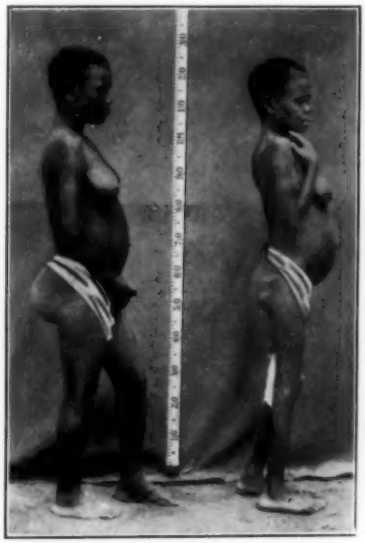
KUARHE MAFUTIMINGA AMOORIAPE

FIG. III.



MONGUNGU MATUHA BOHANI

FIG. IV.



KUARHE AMOORIAPE

[P.T.O.

TO ILLUSTRATE DR. G. ELLIOT SMITH'S PAPER ON "AFRICAN PYGMIES."

MATUHA

— FIG. V. —

BOHANI

MATUHA

—FIG. VI.—

BOHANI

KUARHE

—FIG. VII.—

AMOORIAPE

KUARHE

—FIG. VIII.—

AMOORIAPE

[P.T.O.

fully grown woman. Yet the young woman Kuarhe is nine and a half pounds heavier than Matuha.

The size of the limbs.—The illustrations appended to this account give a good idea of the proportions of the limbs. A study of the measurements of living individuals made by various investigators shows that a considerable proportion of the figures, even when compiled by trained observers, are quite untrustworthy as an index of the size of the bones. In no other way is it possible to explain the great discrepancies which are found in the recorded sizes of the limbs of living pygmies. In addition to the measurements made on numbers of living pygmies by various travellers we have the exact measurements of the skeletons of two Akkas by the late Sir William Flower[18] and Dr. Frank Shrubsall.[19] In a female Akka pygmy 1·218 metres in height the humerus was 19 per cent., the radius 15·7 per cent., the femur 27·5 per cent., and the tibia 22·3 per cent. of the total stature. The most noteworthy feature of these measurements is the great proportionate length of the forearm which is more than 1 per cent. greater than that of Europeans; in this respect the pygmies are distinctly negroid. The other measurements (those of the femur, tibia, and humerus) are almost identical with the average proportions given by Topinard for tall Frenchmen.

In the six pygmies of Colonel Harrison's party the radius is proportionally shorter in the women than in the men, being only 15·2 per cent. in Kuarhe and 15·3 per cent. in Amooriape; in the man Bohani and the boy Mongongu it is 15·6 per cent., in Matuha it is 15·7 per cent., and in Mafutiminga it rises to 16 5 per cent. of the total height. The relatively enormous size of the arm and forearm in the latter youth is well demonstrated in the illustrations. The divergences of the proportions of the other long bones in these six individuals to their body-heights are all within the range of variation given by Topinard for Europeans. There is a noteworthy variety in the size of the feet, as the photographs clearly show. Whereas the feet of the two women (both 195 millimetres long), the boy Mongungu (205 millimetres) and the man Bohani (198 millimetres) are quite proportionate to the body-height, those of Matuha (220 millimetres) and Mafutiminga (235 millimetres) are large and unshapely. Many statements have been made by previous writers in reference to the separation of the great toe from the other four toes and the power of grasping with these toes. Although these statements are true of these pygmies the separation of the toes is no greater than that of many negroes and the power of grasping is equally well developed in other people, even European children, who habitually go barefooted. The limb bones of the two pygmy women dissected in Cairo are all extremely slender—quite disproportionately so, when compared with their length. Most of the characters of the scapula and pelvis agree with those described by Flower and Shrubsall in the case of their pygmies but the pelvis in my cases was not so markedly dolichopelvic as in Flower's case.

The head.—So far as the form of the head is concerned these six people form a remarkably uniform group. All the heads are ovoid in norma verticalis and the length-breadth indices are respectively: 76·5 (Mongungu), 77·7 (Bohani), 78 (Mafutiminga), 78·7 (Amooriape ♀), and 79·1 in both Matuha ♂ and Kuarhe ♀. The heights of four of the crania (measured with Pearson's spanner) are almost identical (135, 137, 139, 139); the two old people have much the loftiest heads, the woman Amooriape's height being 144 millimetres (head length 174) and the man Bohani's cranial height being 155 millimetres (head length 184). The horizontal circumferences of the heads, taking the names in the same order as in the list of cephalic indices, are 514, 544, 533, 518, 514, and 505 millimetres respectively. As a measure of their prognathism the indices expressive of the proportionate lengths of the nasal and prosthionic radii are 111, 104, 115, 110·5, 107, and 108. Bohani is the least prognathous and Mafutiminga the most.

Much stress has been laid by previous writers on the comparative shortness of the crania of pygmies in comparison with their larger negro relatives and the Bushmen population of South Africa. These six individuals exhibit this feature in its characteristic form. The figures quoted above show that the degree of prognathism is a very variable quantity in these people; it is considered to be one of the chief distinctive features of pygmies in contact with Bushmen. The cranium of one of the two pygmies dissected in Cairo is quite orthognathous and even when due allowance is made for the atrophy of the alveolar process, which has followed the loss of the incisor teeth, it does not approach the average condition of pygmy prognathism. When a character exhibits such extreme variability it loses much of its value as a distinctive feature.

In individuals such as these pygmies, in whom the root of the nose is exceptionally flattened and very broad, it is not easy to measure the length of the nose with any degree of accuracy. The nose is exceptionally broad in the four males (varying from 40 millimetres in the boy Mongungu to 49·5 millimetres in Mafutiminga) but is considerably narrower in the women (34 millimetres and 39 millimetres respectively). The characteristic pygmy type of nose is seen in most distinctive form in Matuha and Bohani—the root is broad and very flat, the tip broad and flattened, and the alæ greatly expanded so as almost to equal the tip of the nose in size. The illustrations render any attempt at a detailed description unnecessary. Mongungu's nose represents a youthful phase of the same type. Although actually broader than that of any of the others, Mafutiminga's nose conforms rather to the common negro type, the disproportion between the sizes of the central part and the alæ being much more marked than it is in the other males. The nose of the old woman Amooriape has the characteristic pygmy form but is considerably narrower than that of the men. The root of her nose is so flattened that the broad space between her eyes is almost level. The younger woman Kuarhe's nose exhibits none of the pygmy or even negro form and resembles rather the nasal types so common in Abyssinia and the neighbouring regions, where there is a mixture of Hamitic, Semitic, and negro populations. In profile, however, the flattening of the tip of her nose produces a greater resemblance to that of the old woman than in norma verticalis.

The lips also are quite characteristic. Instead of the massive, fleshy, everted lips of the negro the pygmy has long thin lips the upper of which has a noteworthy subnasal projection. This form of lip with the flattened nose above it gives a strikingly Simian appearance to the features, especially during such acts as drinking and speaking. This is seen to best advantage in the old woman when she is just about to drink: her lips are then pouted out in a tubular manner just like those of a chimpanzee. The lips of the younger woman have been perforated in three places. The ears of all are small; the lobules are poorly developed, especially in the ears of Matuha and Mafutiminga, and in the former the pinna is rather crudely formed. Mongungu's lobules are not perforated but one or both are pierced in the others. The mandible is very narrow and pointed and the chin small in all. Bohani alone has a beard; it consists of a small stubbly growth of short closely rolled hair on the chin and upper lip. The pubic and axillary hair in the two women and the two youths presents similar characters. Bohani has similar hair on his chest and abdomen.

Much has been written by Emin Pasha, Yunker, Stanley, Stuhlmann, and Johnston, among others, of the down-like hairy covering of the whole body of the pygmy people. Such hair is certainly present in these individuals, but I doubt whether, with the possible exception of Mongungu, this hair is developed to any greater extent than in many Europeans. In Mongungu it is distinctly well developed, especially on the back. It is perhaps noteworthy that he is much the youngest of the party. The hair of the head consists in all six of the characteristic discrete "pepper-corn" balls, closely rolled, and of a peculiar dull lustreless appearance, not exactly black but of an indefinite greenish-grey tint. In the youth Matuha the hair was very short on the right side of his head but more abundant on the left side. He had probably at some quite recent period had the right side of his head shaved. In Dr. David's photograph of a group of Mbute pygmies which was given me by Professor Schweinfurth (and has been published, so he tells me, in a reduced form in "Globus") various fantastic methods of dealing with the hair are shown. One woman has the hair removed from the right side and another from the left side of her head; another woman and two men have had the whole of their hair removed except a frontal fringe; several of both sexes have had symmetrical similar areas denuded of hair on both sides and several men have had their foreheads shaved so as to convert the edge of the hairy-covering into a sharply defined line. Matuha has apparently been subjected to this procedure.

Other features.—A noteworthy peculiarity of all pygmies, both old and young, is the extraordinary prominence of the

[18] Op. cit., supra. [19] Op. cit.

abdomen. That this is not the result of overfeeding since they have become exiles is shown by the fact that this feature is equally pronounced in those individuals who have been photographed in their native forests (as in Dr. David's photograph). In one of the pygmy women dissected by me this prominence of the paunch was associated with a peculiarity of the colon. The cæcum was placed high up in the lumbar region and from it the colon bent downward into the right iliac fossa; then becoming enormously distended it pursued a sigmoid course across the abdomen, completely filling the anterior part of the cavity and occupying the abdominal bulging. The splenic flexure was separated from the spleen by the pancreas. Practically the whole of the colon was thus constituted by the large stomach-like organ which would by most writers be labelled transverse colon.

Until Stuhlmann exhibited photographs showing definite steatopygia in a pygmy woman it was commonly supposed that this condition never occurred in this race and its absence was regarded as one of the great distinguishing features when the pygmy was compared with the Bushman. In one of the women of Colonel Harrison's party—Kuarhe—there is a very steatopygous condition, whereas in the old emaciated woman there is not only no trace of it but the buttocks are unusually small.

In the pygmy women dissected in the Cairo School of Medicine the facial muscles presented the usual negroid features—an exceptionally reddish colour and a much greater diffuseness than is found in the ordinary European. In one of them a pair of symmetrical sternales muscles were found, their upper tendons being attached in front of the manubrium sterni and the lower tendons in front of the seventh costal cartilages. In the same subject the trapezius muscle gave off a slip to the sterno-mastoid on the left side; neither omo-hyoid muscle had an intermediate tendon but merely an ill-defined tendinous intersection. The brain of this woman, after having been in the body preserved by intravascular injections of 10 per cent. formol for three days, weighed 880 grammes. So that when it was fresh it probably weighed about 850 grammes. But as it had a softening of the motor speech centre in the left hemisphere and a second softening in the parietal area of the right hemisphere its weight in the healthy state may have been nearer 900 grammes. That the brain had shrunk (as the result of old age) was shown by the great enlargement of the frontal air cells as the consequence of the marked inner bulging of the internal table of the frontal bone. The brain of the younger second pygmy woman (the lower femoral epiphysis of whom was still separate) weighed 950 grammes after formalin. The average brain weight of 100 fellahin women weighed by me was 1190 grammes. In European women it is about 100 grammes heavier and in Soudanese women almost as much lighter. Taking into consideration the size of these women a brain weight of 900 grammes compares not unfavourably with that of Soudanese women of bigger stature. At the same time such a small figure for a human being has a considerable significance when it is recalled that it is so little bigger than the brain of pithecanthropus as estimated by Dubois. Perhaps more surprising than the small size is the fact that these brains exhibit no more simian likeness than, if as much as, most negro brains. Symmetrical lunate sulci (Affenspalten) of a moderately large size were present in the younger woman but in the other brain they were very small and not at all pithecoid. The Sylvian fossa was widely open and a large part of the insula was exposed, but this often occurs also in Soudanese and other brains. The characters of the skull of the old woman show a considerable resemblance to those of the Akka woman's skull described by Flower. The nasal bones were fused as in the apes. The spheno-maxillary fissure was widely open. The tip of the great wing of the sphenoid just reached the parietal bone. The temporo-maxillary joints were completely disorganised by severe rheumatoid arthritis.

The abundant secretion from the large sebaceous glands yielded a most powerful and objectionable odour which did not become appreciably less until more than a week of daily ablutions and even up till the last day of their stay in Cairo the odour still clung to them. It may be compared to the well-known "nigger smell" but it was even more pronounced.

These pygmies show a strange indifference to what is going on around them. They seem to be altogether devoid of ordinary curiosity. Even the loud buzzing of a Ruhmkorff coil and the illumination of a Crookes's tube were not sufficient to attract their attention to either. Their sense of modesty was most pronounced, especially when it is recalled that they are said to go naked in their own country. They are extremely shy and reticent until they become familiar with the people around them. Their music differs entirely from the Egyptian and Arabic tunes but is indistinguishable from those of the Soudanese negroes. Unlike the native inhabitants of Egypt they are able to recognise photographs and pictures that are shown them.

Conclusion.—As the late Sir William Flower and many other writers have repeatedly stated, the pygmies are certainly negroid and many of the negro features, such as the projection of the jaws and lips, the flatness of the nose, the elongation of the palate, the large size of the teeth, and the characters of the hair, are even exaggerated—i.e., are ultra-negroid in the pygmies. From the time the pygmies were re-discovered in recent times there have always been writers who have put forward the many points of resemblance between the pygmy and the Bushman—the smallness of stature, the "pepper-corn" hair, the flat, broad nose, the convexity of the subnasal space, and the occasional steatopygia—as arguments in favour of the recognition of a racial affinity, and it must be confessed that this array of resemblances is difficult to "explain away." Deniker has examined all these points of resemblance in some detail and has come to the conclusion that none of them will stand close examination.[20] Shrubsall, on the other hand, as the result of a comparison of the crania of Bushmen and Flower's Akka pygmies, expressed the opinion that "it seems probable that the Negrilloes and the Bushmen are allied." He goes on to state that "the principal objection to such a view is that the phenomenon of steatopygia has as yet not been described among the Negrillo races."[21] This was written, of course, before Stuhlmann showed that this condition does sometimes exist in pygmies. These early comparisons of pygmies with Bushmen probably led observers to exaggerate the lightness of the skin tint of the former. That the pygmies are lighter in colour than many negroes is obvious at a glance, but it cannot be too strongly insisted on that many true negroes have the same chocolate-brown coloured skin as the pygmies. Even this small party of six exhibit a wide range of colour. Mafutiminga, in colour as in many other features, is a dusky negro, whereas the old woman Amooriape is of a comparatively light brown tint and the colours of the other four are intermediate between these two extremes.

If we attempt to sum up the features of these pygmy people we have no reason for regarding them as either more simian or more primitive in structure than ordinary negroes. In comparison with the Bushman they must be considered as much more decidedly negroid. When we take into consideration the many undoubted resemblances of pygmies and Bushmen it is easier to picture these likenesses and their attendant differences as the results of a diverse specialisation of two branches of one stock rather than as the product of a tendency to convergence of two independent races. So far as we know the structure of the pygmy people there is no reason for regarding them as other than merely small negroes. The variability of type exhibited in even this small party probably indicates that the pygmy peoples have considerably intermingled with other races.

NOTE ON INTESTINAL WORMS FOUND IN AFRICAN PYGMIES, BY DR. A. LOOSS.

I avail myself of the opportunity afforded by the publication of Dr. Elliot Smith's article on African pygmies to make a few provisional remarks on the intestinal parasites found in the six Mbute (Bambute or Wambitti) pygmies described by him. Very little being as yet known of the parasites of man in Central Africa, Dr. H. P. Keatinge suggested that I should examine the stools of the six individuals. When this was done it was found that all of them harboured the eggs of worms. There were altogether five species represented: an ankylostoma, an ascaris, a trichocephalus, schistosoma hæmatobium, and oxyuris vermicularis. The first four genera in this list were recognisable by the presence of their ova in the dejecta and the last named was found later in the shape of some full-grown specimens. The ankylostoma eggs were discovered in all six individuals, two

[20] The Races of Man, p. 455.
[21] Journal of the Anthropological Institute, 1897, p. 283.

of whom presented them in fairly considerable numbers. The trichocephalus was found in two of the men, the ascaris in one man and one woman. Schistosoma and oxyuris were each found in one male person only. The smallest boy (Mongungu, aged 12 years) harboured all species except oxyuris. The schistosoma eggs were found in his fæces only; they were lateral-spined and rather scanty. In some specimens of urine (very small in amount) none could be discovered.[22]

In size, shape, and structure of their contents the schistosoma eggs fully agreed with the ova of the Egyptian bilharzia; thus I have no doubt that they really belong to this species. As to the other kinds of eggs observed in the fæces of the pygmies, I was not so sure of their identity. There was naturally no doubt as to the genera of the parent worms, but all the eggs in their general appearance slightly differed from those of the well-known species infesting man elsewhere. The ascaris eggs, varying between 0·069 to 0·042 millimetre and 0·063 to 0·05 millimetre, and thus coinciding in size with the eggs of ascaris lumbricoides, differed from these by their paler and decidedly less refractive shell. The albuminous envelope raised in the characteristic tubercles was very thin and often quite absent. The protoplasm of the undivided egg-cell seemed to be markedly less granular than in the eggs of ascaris lumbricoides, the entire eggs becoming thus paler than usual. The trichocephalus eggs did not quite reach the size of those of trichocephalus trichiurus. In Egyptian specimens of this species I find the length of the eggs to vary between 0·063 and 0·067 millimetre and the breadth between 0·03 and 0·034 millimetre, whereas the eggs in the stools of the pygmies almost uniformly showed a length of 0·054 and a breadth of 0·025 millimetre. Moreover, their shell which, in trichocephalus trichiurus, is of relatively considerable thickness with strongly refractive outlines, was in the eggs yielded by the pygmies only about half as thick, the polar plugs but feebly developed and less refractive too. The ankylostoma eggs, finally, presented a striking difference of another kind. It is a well-known fact that the eggs of ankylostoma duodenale in fæces immediately after evacuation show the original egg-cell divided into four embryonic cells, eggs with fewer or more cells forming the exception to the rule. In the fæces of the pygmies, even when examined a quarter of an hour after evacuation, the great majority of the ankylostoma eggs exhibited an embryonic body composed of from eight to 16 cells, eggs with four cells being present also but by no means so frequently as in the case of ankylostoma duodenale. Measurements of a number of these eggs showed that, on an average, they also possessed slightly larger dimensions. Apart from some exceptional cases the eggs of ankylostoma duodenale vary in length between 0·056 and 0·061 millimetre and in breadth between 0·034 and 0·038 millimetre. The corresponding figures found on the eggs in the stools of the pigmies were 0·059 to 0·065 millimetre and 0·038 to 0·04 millimetre.

Owing to these peculiarities observed in the eggs it seemed worth while to try to obtain the full-grown worms. At my request Dr. Keatinge kindly agreed that the six people should undergo an anthelmintic treatment in the Kasr-el-Aini Hospital. A first "cure" was made with thymol in the usual way adopted in the hospital, but owing to the small size of the patients only four grammes of thymol were given. The result was almost negative, only two ankylostoma worms being expelled from the six people. Since it did not seem advisable to increase the dose I suggested that the "cure" should be repeated with the "white mixture" recently recommended for ankylostoma duodenale as both efficacious and harmless by Dr. Herman in Mons, Belgium. The mixture is composed of eucalyptus oil, 2 grammes; chloroform, 3 grammes; and castor oil, 40 grammes. The result was, so far as the ankylostoma worms were concerned, very satisfactory. The "cure" produced altogether about 150 worms and a repetition made after three days' interval about 30 worms more. All were still living when voided and thus furnished excellent specimens for anatomical research. Of the other species, the eggs of which had been found in the fæces, only one female trichocephalus was voided in addition to the few oxyurides mentioned above. Owing to this result I am as yet not able to tell whether the differences observed in the ova have their cause in specific differences of the parent worms or whether they represent mere local aberrations.

A close examination of the ankylostoma specimens obtained by the treatment revealed them to belong to the species necator Americanus, the "New World hookworm," which was some years ago recognised by Stiles as a distinct species widely spread, in addition to the true ankylostoma duodenale, among the white and coloured population of the southern parts of the United States. The same species is also very common in South America and represents the "ankylostoma duodenale" mentioned by earlier South American, especially Brazilian, writers. I have made a careful comparison of North and South American specimens of the species with the specimens voided by the pygmies but have not been able to find any specific differences.

It may thus be considered as settled that the "New World hookworm," necator Americanus (Stiles), occurs also in natives of Central Africa. This fact is not without a certain interest from the point of view of the geographical distribution of the species. It is said that the pygmy people live scattered thoughout the forests of the tropical belt of the African continent. The more or less frequent occurrence of "ankylostoma duodenale" has been reported from the eastern as well as from the western coast of Africa (Zanzibar, Uganda, German East Africa, Congo to Senegambia). Now there seems to be no just reason to assume that the necator should be restricted to the pygmies; it is, on the contrary, much more probable that its geographical range comprises the whole native population of the tropical belt of Africa—naturally, so far as the hydrographic conditions of the land allow of the propagation of the worm. If this be true—and I am almost convinced that it is—then it would follow that what, in the reports alluded to above, was considered as ankylostoma duodenale is in reality necator Americanus; if not exclusively, at least to some extent. So far as I can gather from the literature at my disposal in none of the respective cases has a minute examination of the anatomy of the parasite been made, its presence was only stated from the appearance of the ova in the fæces, or after finding the full-grown worms in post-mortem examinations. Since both eggs and parent worms of the two species resemble each other very closely on superficial examination—indeed, their definite distinction by Stiles dates back only three years ago—such a confusion is almost a matter of course. Since I propose to return to the fuller discussion of this subject on another occasion I abstain from entering into further details in this place. The principal object of this note is to state the occurrence of the "New World hookworm" in natives of Central Africa and to attract the attention to its probable occurrence in other parts, especially the coasts of tropical Africa. For physicians practising in these countries it would be an easy matter to settle the question, either by themselves determining the species of the parasite or by sending some well-preserved material for identification to experts. I myself would gladly undertake such work of identification.

Cairo.

[22] This assortment of species and the relative frequency in which the individual species occur agree fairly well with the results of similar researches recently obtained from natives of Uganda by Castellani and Low (see Parasites and Parasitic Diseases in Uganda, in Archiv für Schiffs und Tropen-Hygiene, vol. viii., 1904, No. 3).

FRONTAL SINUSITIS: TWO CASES OF DEATH AFTER OPERATION.[1]

BY STCLAIR THOMSON, M.D. LOND., F.R.C.P. LOND., F.R.C.S. ENG.,

PHYSICIAN FOR DISEASES OF THE THROAT IN KING'S COLLEGE HOSPITAL; FORMERLY PHYSICIAN TO THE THROAT HOSPITAL; AND SURGEON TO THE ROYAL EAR HOSPITAL.

WE in England have learned much from the French School of Laryngology in regard to the treatment of frontal sinusitis and one of the most valuable lessons has been the frankness with which unfortunate results have been put on record. In exploring any hitherto neglected corner of the body and in designing suitable operative relief it has unfortunately been impossible always to avoid a rate of mortality which has been greatly diminished after the region has been thoroughly surveyed. In these early investigations one of the principal helps towards progress

[1] Translation of a paper read before the Société Française de Laryngologie on May 10th, 1905.

has been the record of any fatal cases and we all feel indebted to M. Luc for having published his fatal results, as we also do for the help obtained by the record of his successful cases. I am glad to think that the same frankness has also been shown by several of my British *confrères* and deaths following operation on the frontal sinus have been placed on record by Tilley,[2] Burghard,[3] Lack,[4] Milligan,[5] and Logan Turner.[6] I know that many others have occurred and trust that details of them may be published. It is only in this way that we can advance the subject by determining exactly whether the unfortunate results are due to incomplete diagnosis, selection of unsuitable cases, the order of procedure, defects in methods or technique, or the general condition of patients. In neither of the cases which have occurred in my own practice could death be attributed entirely to the operation. The fatal issue was determined by operative interference but in one case it was precipitated by operation on the maxillary sinus before the frontal sinus was interfered with and in the other by an incomplete operation on the fronto-ethmoidal cells, although the frontal sinus itself was quite satisfactorily dealt with.

CASE 1.—In August, 1899, a female, aged 27 years, was admitted under my care at the Throat Hospital for bilateral frontal, ethmoidal, and maxillary sinusitis. The Caldwell-Luc operation was first carried out on the left maxillary sinus and the patient left the hospital (Sept. 15th) with the intention of returning later for further treatment. But the day she left she was seized with acute pain round the left eye and on the left side of the head; there were epiphora and swelling of the eyelids on that side and on Oct. 6th she saw a medical man who made an incision below the left eye and evacuated pus. When re-admitted to hospital on the 15th she was very weak and worn out with pain and sleeplessness. Both lids of the left eye were swollen and inflamed. There was a small opening below the left eyelid through which a probe passed into the nose. The skin over both frontal sinuses was swollen and tender but not reddened. On the left side of the bridge of the nose there was a raised, reddened, fluctuating area, tender on pressure, and of the size of a sixpence. The temperature varied from normal to 100·8° F. and the pulse was from 70 to 90. The left frontal sinus was opened by an incision which passed through the swelling on the left side of the nose. This was found to be soft inflamed tissue, beneath which the frontal bone was bare. This was chiseled through and the frontal sinus was found to contain polypoid material. The naso-frontal canal was considerably enlarged and the cavity packed with gauze. The wound was not closed and the packing was changed daily. The operation was followed by what proved to be a deceptive calm. For nearly three weeks the notes report that she was "doing well." The temperature, pulse, and respiration were normal and the wound "looked healthy." Then neuralgia on the opposite—right—side of the face was complained of, the forehead became puffy and œdematous, the right frontal sinus tender, and the right eyelids swollen. The left eyelids were also slightly œdematous. It was evident that extension of mischief was taking place around the already opened frontal sinus and that a subacute infection was spreading from the unoperated one (the right).

On Nov. 16th a second operation was performed. A median vertical incision nearly four inches in length was made in the forehead. This was connected with the wound over the left frontal sinus and with a similar incision made over the right sinus. On reflecting the two triangular flaps the frontal bones were found carious over a semicircular area extending to a radius of one and a half inches from the fronto-nasal suture. In removing all this necrotic bone the rim and part of the roof of each orbit were removed and as part of the posterior wall of the frontal sinus was bare the dura mater over the left orbit was exposed. Polypoid hypertrophies were removed from the right frontal sinus and the recent granulations were scraped from the left. The fronto-nasal ducts were enlarged by freely curetting the ethmoid cells. The frontal septum was not interfered with, although part of it was seen to be carious. The vertical incision only was closed with sutures and each horizontal wound was lightly packed with cyanide gauze. Again there came a period of deceptive comfort. For a week the patient was easy and all went well. Then came pain in the right temporal region and a fluctuating swelling in the right infra-orbital region. On incision pus was evacuated and bare bone detected. Evidently in the right ethmoidal labyrinth there was retention and infection. The ethmoidal cells on the right side were therefore again freely curetted from the frontal wound, part of the os planum being removed. After another week of apparent well-being the temperature rose to 103·4° on Dec. 4th, the patient complained of occipital headache, and became delirious at night and heavy and irritable by day. Still the wounds looked perfectly healthy, there was free drainage into the nose, and no puffiness or tenderness was detected anywhere. It was apparent that the septic process had not only passed through the bones of the skull but was threatening, if it had not already attacked, the meninges. Yet one more attempt was made to limit the septic invasion. On Dec. 5th the median vertical wound was reopened and the skin flaps were reflected. The frontal bones were found carious and were removed in the space included in a semicircular area with a radius of from one and a half to two inches from the root of the nose. This not only cleared away the posterior (cerebral) wall of each sinus but exposed the dura mater containing the superior longitudinal sinus. The septum between the two sinuses was removed as well as the orbital plates of the frontal, so that the contents of the orbit were in contact with the dura mater. No improvement followed this last effort to check infection. Although the large area of the wound looked well and the exposed dura mater began to be covered with small granulations, the symptoms of lepto-meningitis increased and after nine days of irritability, delirium, epileptiform seizures, drowsiness, and coma the patient died on the 13th, three months from the onset of symptoms and two months from the first opening of the left frontal sinus.

There was no post-mortem examination, but it was evident that meningitis was the cause of death following on osteomyelitis, due to septic absorption from chronic suppuration in the frontal and ethmoidal sinuses.

The following points appear noteworthy in the above case: (1) the traumatism caused by the Caldwell-Luc operation performed on the left maxillary sinus stimulated the latent suppuration in the ethmoid and frontal cavities of the same side; and (2) surgical treatment of the left frontal sinus led to septic absorption from the chronic suppuration going on in the frontal and ethmoidal sinuses on the opposite side.

CASE 2.—A girl, aged 17 years, came under my care in King's College Hospital in June, 1902, for chronic suppuration in all the accessory sinuses of the nose. She had previously attended the ophthalmic department, complaining of swelling above and below the right eye, with some pain. She first noticed pain 18 months previously and the swelling commenced nine months later. The pain was sharp and neuralgic but not constant, being sometimes absent for a week at a time. She had neither cacosmia nor anosmia and had paid little attention to the fact that she had a chronic discharge of "matter" from the nose. There was no diplopia. The examination of the eyes was negative but, as is shown in the illustration (Fig. 1), they appeared to be pushed apart by the broadening below the root of the nose. The maxillary sinuses were first drained through the tooth sockets. On June 13th, 1902, the right frontal sinus was opened by an Ogston-Luc operation; numerous polypoid hypertrophies were cleared away (Fig. 2) and the fronto-nasal duct was enlarged. Towards the end of the operation a sudden eruption of pus was noticed near the infundibulum. Its source could not be detected; there was no recurrence of it, and as the frontal sinus had been freely exposed it was concluded that it was simply some pus which had welled up from the nose. The wound was flushed out, only partially closed by stitches, and lightly packed with iodoform gauze, which was left projecting from the inner corner of the wound. As in the previous case, there followed a period of deceptive calm. For ten days the patient continued to eat and to sleep well. The gauze packing was changed daily; the discharge on it rapidly diminished and became mucoid; the drainage into the nose was so free that lotion easily passed down the fronto-nasal canal, and the patient could readily blow air up through it. The sinus was filling with some healthy-looking granulations, the pulse and temperature were normal, the patient got out of bed for a few hours, and nothing could promise better. Then some headache was

[2] THE LANCET, August 19th, 1899, p. 534; and Edinburgh Medical Journal, March, 1905 (two cases).
[3] King's College Hospital Reports, vol. vii., 1899-1900, p. 242 (on case).
[4] Edinburgh Medical Journal, 1902 (two cases).
[5] Brit. Med. Jour., Jan. 28th, 1905 (two cases).
[6] Edinburgh Medical Journal, March, 1905 (one case).

comp'ained of and tenderness and a puffy swelling were detected over the forehead.

On June 26th—i.e., 13 days after the first operation—the patient was anæsthetised and a vertical median incision was made (as in the first case) so as to reflect up a triangular flap of skin from the right side of the forehead. The puffy swelling was found to be simply œdema; there was no collection of pus. The fronto-ethmoidal region was therefore

FIG. 1.

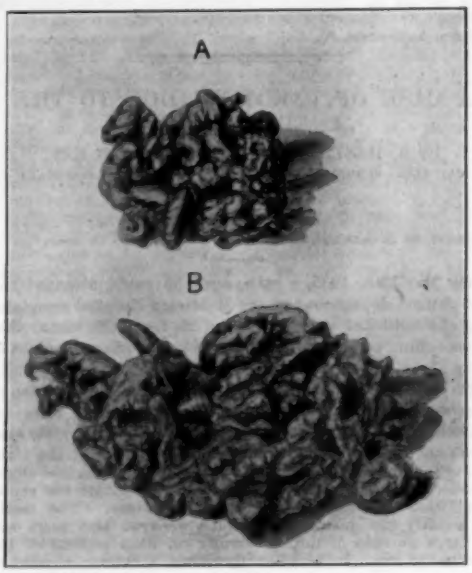
Showing broadening at the root of the nose in Case 2.

more carefully explored and two long tunnels were discovered, one running backwards below the floor of the frontal sinus as far as the sphenoid and the other running outwards below the floor as far as the external angular process. They were lined with polypoid hypertrophies and it was evident that it was from one of these digitations that the sudden eruption of pus took place at the end of the first operation. They were well curetted. While the septal wall of the sinus was being cleared a portion of bone broke down and so made an opening into the left frontal sinus. As a large quantity of pus escaped the left sinus was freely opened and treated as the right had been and particular care was taken not to overlook the long fronto-ethmoidal cells. On this side also they were found running outwards and also as far back as the sphenoid, forming a double roof to the orbit, a sort of honeycomb partition between the frontal sinus and the orbit. The fronto-nasal canal on the left side, which was blocked with polypoid growths (Fig. 2), was well cleared and the wound lightly packed but only partially stitched up. Again, there was a period of apparent progress but at the end of another 13 days there was puffiness of the right upper eyelid and on passing a probe along the wound in the direction of the external angular process a pocket of pus was discovered and a piece of bare bone was felt. On July 11th this collection was exposed and the underlying bone was found necrosed and removed. The whole of the orbital plate was loose and was taken away and another ethmoidal digitation was exposed running backwards and outwards behind the one already cleared. The patient again appeared to be doing well but owing to my enforced absence from London I had to transfer her to the care of my colleague Mr. F. F. Burghard. Fortunately she could not have been in better hands, for he is a skilled laryngologist as well as general surgeon. On August 8th he had to perform an operation on the left side similar to the last one I had carried out on the right. The patient remained under Mr. Burghard's care for more than a year, during which time alarming symptoms recurred several times, to be relieved by evacuation of pus in the fronto-ethmoidal regions or even in subdural abscesses.

When I saw her again in the autumn of 1903 the frontal sinuses appeared obliterated, but there was a suppurating sinus at the inner corner of each frontal incision and at the outer corner of the left. I could not think they originated from any ethmoidal cells, so freely had they been dealt with, and my surprise therefore was great when the fronto-ethmoidal area was again laid open to discover more suppurating sinuses far back in the remains of a partition between orbit and frontal sinus, and one large tract low down in the remains of the division between the right and left side—a kind of supernumerary central frontal sinus but really a large fronto-ethmoidal cell. Again I had, for personal reasons, to hand over the case to my obliging colleague. He also was astonished that any ethmoidal recess could have escaped attention. In spite of his care further purulent collections took place, subdural abscesses and meningitis developed, and the patient died about one and a half years after the first operation.

In this case the maxillary sinuses were drained for some time before the frontal cavities were opened; when the latter were operated on they were opened completely; free drainage was established into the nose; the cavities were lightly packed; and the skin incisions were only partially closed. The complications which occurred therefore could not be attributed to incomplete operation on the frontal sinuses, premature closure of the wound, insufficient nasal drainage, too light packing, nor yet to reaction due to operation on the maxillary sinus. I think it is clear the troubles were all due to the fact that at the time of this operation—it is now three years ago—I had not realised the importance of thoroughly treating the fronto-ethmoidal cells

FIG. 2.



Polypoid hypertrophies of the mucous membrane from the right (A) and the left (B) frontal sinuses in Case 2. Life-size drawing.

nor was I prepared to meet with such a large, tortuous, and irregular labyrinth. Even had I been prepared for this, I would not have known how to deal with it satisfactorily, for Killian's method of operation was then unknown to me. In both these cases it is clear that the key of the whole matter lies in successfully dealing with the ethmoid. A simple suppuration in the accessible frontal sinus, with its dependent ostium, is much more easily dealt with than suppuration in the

deep, irregular, and thin-walled fronto-ethmoidal galleries, and I think our most brilliant cases have been those in which there has been little or no accompanying suppuration in the ethmoid.

The following conclusions may be drawn from these two cases:—1. In cases of multisinusitis it is well to drain the maxillary cavity some time before the frontal is operated upon. Both cavities may be operated on at the same time; but if only one sinus is operated on at a time it should be the frontal sinus, the lower cavity being drained until it can be opened. 2. In spite of free opening of the frontal sinus, the establishment of a large communication with the nose, and the avoidance of closure of the external wound a slow infection of the bone may take place leading ultimately to infection of the meninges. This may even be started in suppurating cavities on the *opposite* side to the one operated on. 3. The local condition of the wound, as well as the pulse, temperature, and feelings of the patient may fail to indicate the onset of mischief. After one to three weeks this is revealed by headache, pain, tenderness, and puffy swelling on the forehead or around the eyes. 4. When septic osteo-myelitis has started the most vigorous measures may fail to arrest it. It may last one and a half years before terminating fatally. 5. The chief danger appears to lie in the ethmoidal labyrinth, owing to its anatomical irregularities and to the difficulty of treating them satisfactorily. 6. Up to the present the operation which best meets these difficulties is that of Killian. In many cases a preliminary endo-nasal operation on the ethmoid is advantageous.

In conclusion I would point out that these two cases occurred six and three years ago and that in the meantime the study of fronto-ethmoidal suppuration has been greatly advanced. At the present time the subject is very much to the fore and I feel we are approaching a time when the condition can be treated with more certainty and safety. Meanwhile it is not free from anxiety and danger. These two cases may serve as a warning and as a guide to those who have not met with such complicated conditions and they go far to confirm the action of Dr. Luc in adopting Killian's modification of his own operation.[7]

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A CASE OF PAROTITIS DUE TO THE PNEUMOCOCCUS.

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ON May 13th, 1905, a man, aged 55 years, attended the out-patient department of the Middlesex Hospital complaining of swelling of the right side of his face. He stated that the swelling commenced with slight pain during the night of May 11-12th and that since that time he had been troubled with a continuous but not severe aching pain in the region of the swelling and, further, that it hurt him to open his mouth. On looking at the patient's face it became clear that the swelling was due to a general enlargement of the right parotid gland and firm pressure on the gland elicited slight tenderness. When the patient opened his mouth the septic condition of that cavity became evident. The teeth, especially the molars, were much decayed and there was a large amount of tartar, notably on both aspects of the lower incisors. In addition there was a certain amount of pyorrhœa with retraction of the gums, more marked in the case of the lower jaw. The left salivary papilla presented a normal appearance, but the right papilla was reddened, bled readily when touched, and was slightly more prominent than that of the opposite side. The patency of Stenson's duct was assured by noticing several drops of saliva exude from the papilla while the mouth was being examined.

On May 15th the patient returned to the hospital; the swelling on the right side of the face was much less but the left parotid was now for the first time noticed to be slightly enlarged. All pain had ceased. The right salivary papilla was only slightly inflamed and the left one seemed quite normal. On the following day all swelling on the right side had disappeared and the enlargement of the left parotid was only just perceptible. The patient's temperature was taken on this occasion and was found to be 98·6° F. and his urine tested for albumin gave a negative result. Five days after his first coming to the hospital all swelling and pain had disappeared from both sides and he seemed to have regained his usual health.

The treatment had been very simple and consisted of a purge, a mouth wash of mercury perchloride solution (1 in 2000), and a fomentation over the swollen parotid gland. Bacteriological examination was made of the saliva from the right gland on May 13th, when the patient first came to the hospital. The saliva was obtained by rubbing an ordinary "throat swab" over the salivary papilla after the inside of the cheek had been carefully swabbed. A nearly pure culture of a diplococcus was obtained from this in 48 hours' incubation at 37° C. It retained the stain when treated by Gram's method and it possessed a capsule. On May 15th, when the patient next attended, the mouth was swabbed out and then some saliva was collected from the right duct directly by passing a sterilised capillary tube into it and expressing the secretion from the gland. A "swab" was also taken from the left cheek over the duct on that side. The fluid from the right side furnished a pure culture of a diplococcus precisely similar to the organism obtained at first. Tubes inoculated from the left cheek remained sterile. Subcultures made from the second set of tubes showed that the organism would not grow upon or in gelatin at 20° C., or on potato or on inspissated horse serum at 37° C. On agar it appeared in the form of numerous discrete, minute, round, transparent colonies; but it would not grow under anaerobic conditions. It failed to ferment glucose but milk was curdled by it. Hanging drop preparations of broth culture after 24 hours showed numerous diplococci and short chains of 4–12 elements. Two experiments of intraperitoneal injection of mice with broth cultures failed to show pathogenic action. A third bacteriological examination of the patient's saliva a few days later showed the presence of the same organism but the colonies obtained were very much fewer in number.

There appeared to be no reason to doubt that the parotid swelling was inflammatory in nature and we would attribute it to the diplococcus which we obtained in pure culture in the secretion of the gland. This organism we recognised as pneumococcus but of a strain possessing little virulence.

ASPIRATION IN DISEASES OF THE EAR AND THE NOSE.[1]

BY DR. MED. R. SONDERMANN.

WHENEVER hollow organs of the human body are attacked by diseases accompanied by suppuration the evacuation of the pus is, beyond any doubt, the most important task of the medical art. If such an evacuation can be fully effected we not only notice an improvement but very frequently recovery ensues without the help of any other measures. The more deeply the pus is situated the more difficult it is, of course, to evacuate it, and especially is this the case in suppurative inflammations of the nose and the ear and their accessory cavities where there has until now scarcely been known a method by which thorough fulfilment of this requirement could be effected. Irrigation, which is employed for this purpose after more or less important surgical interference in cases of empyema in the antrum of Highmore and less frequently in other accessory cavities, is impossible in cases of acute suppurative inflammation of the middle ear and of the mastoid process as long as there only exists a small opening in the membrana tympani. In the same way

[7] At the meeting at which the above paper was read three other cases of death were reported after operation on the frontal sinus. In one (Dr. Mermod of Lausanne) the patient succumbed to acute lepto-meningitis four days after operation by Killian's method. In the two others (Dr. Cistex of Paris) death from meningitis occurred several weeks after operation.

[1] Sondermann: Suction applied to Diseases of Cavities and to Lupus, a paper read at the meeting of physicians and naturalists, Breslau, 1904; Eine neue Methode zur Diagnose und Therapie der Nasenerkrankungen, Münchener Medicinische Wochenschrift, 1905, i.; Saugtherapie bei Ohrenerkrankungen, Archiv für Ohrenheilkunde, 64, i.

blowing through the Eustachian tube and through the external meatus to evacuate the pus has proved to be of doubtful success only. Greater advantages may be derived from the aspiration method, although until now it has but rarely been applied in the therapeutics of diseases of the ear. In Politzer's handbook[2] this method has been cited among those of medical investigation and treatment, but according to the passages referred to its employment is rather rare and as regards the treatment of acute suppurative otitis media its use has not been mentioned at all.

Hartmann[3] only refers to the rarefaction of air in the external meatus in connexion with the treatment of noises in the ear in cases of chronic otitis media without secretion. Nor do we find it mentioned in the article by Blau[4] in the Encyclopædia of Diseases of the Ear. Ostmann[5] in the same work only states that rarefied air is but little applied in these cases because it has hitherto been used only in an inefficient way and without satisfactory results. In cases of disease of the nose and its accessory cavities the suction method, as far as I know, has not yet been therapeutically applied at all.[6] All suction methods applied to the ear agree in requiring a complete closure of the external meatus. This is attended with many difficulties. The external meatus is very sensitive in suppurative diseases and the introduction of the tube is therefore, especially if repeatedly applied, rather painful, which renders it difficult to make it fit tightly. The space over which the rarefaction of air is extended is very small, so that too strong an effect may easily be produced. All these difficulties are met by my apparatus (*vide* illustration[7]) which not only hermetically

closes the external meatus but also covers in the whole ear, including the auricle. It consists of a hollow mask open at one side and surrounded by a hollow ring of hardened rubber, and by means of an elastic tube it is connected with the suction ball. The latter, as well as the elastic tube, possesses a valve by which the air can only pass outwards after the suction ball has been compressed. As the mask is of triangular shape it can also be applied to the nose if required. By a slight pressure it fits almost hermetically on the skin and can therefore be applied easily at any time by the patient himself without the help of another person. There is no contact whatever with the external meatus and its contents and there is scarcely any danger to be feared from too strong a suction, as the rarefaction of air is spread over a relatively large space and cannot exceed the amount corresponding to the elasticity of the suction ball. In cases of acute suppuration a slight aspiration will be found sufficient in order to evacuate the pus from the middle ear and even from the cells of the mastoid process into the external meatus. On the other hand, in cases of chronic empyema a stronger suction ball can be used, and especially when the membrana tympani or the ossicles are partly or entirely missing. Then it will be possible to exert a more intense suction, by which less fluid secretions are discharged if the nidus is connected with the middle ear. To this must be added that the walls of the cavity are artificially rendered hyperæmic. The importance of this process has only been recognised within the last ten years and its recognition is especially owing to the articles of Professor Bier of Bonn. This is not the place to dwell upon his statements in detail but I should like to point to his comprehensive monograph of Bier, Hyperämia als Heilmittel,[8] in which he enters fully into the actual state of our knowledge of this process. The assertion that hyperæmia possesses a great remedial effect in a great many cases can scarcely be disputed any longer, although it cannot yet be definitely stated which kind of hyperæmia—whether active, passive, or mixed—will be applied with the best effect in every individual case. We must suppose that in the forms of disease under discussion both veins and arteries take part in the augmented blood-supply produced in the walls of the middle ear by the negative pressure caused by aspiration. If this be a fact a mixed hyperæmia is doubtlessly effected. Moreover, it must be added that by the suction method very often secretions are loosened and even discharged which, being of a more adhesive nature, are not affected by irrigation at all or only with great difficulty. After suction, however, the irrigation of the ear may be much more effective. These different therapeutical effects, however, are the more valuable as the patient himself is able to manage the application quite comfortably; this fact facilitates in a high degree the use of this method, for in order to be successful the applications must be often repeated. In two cases of acute suppuration of the middle ear in which the mastoid process was also affected by the disease, as was shown by the swelling and the tenderness, and in which the intense pain continued in spite of the free and copious discharge of pus, the aspect of both the cases changed at once after the pus had been evacuated several times a day by aspiration. The pain and tenderness ceased almost directly as well as the discharge and the patients rather liked the aspiration because they felt an immediate relief in both head and ear. Such an instantaneous effect is comprehensible because pus was also evacuated by suction from the mastoid process, for the discharge of pus in one sitting was far too abundant to have been extracted from the tympanic cavity only. This seems also to be proved by the instantaneous decrease of tenderness which can scarcely be attributed only to the "dry-cup" effect of the apparatus. The result of the treatment has also been satisfactory for the condition of the ears after the application was by no means worse than it had been before. It appears from this that the ears had not in any way been injured by the suction method although it had been frequently applied. On the other hand, it is scarcely to be feared that any harm should result as the suction force required for evacuating pus is but slight. There is no doubt but that the patients are treated in this way far more pleasantly than by attempts at removing pus by compressing the air in the Eustachian tube or in the external meatus.

Chronic suppuration of the ear has been treated by me with methodical aspiration in a great number of cases and the advantages mentioned above could always be recognised and the pain was relieved at once and very often disappeared altogether. In several cases where there was no membrana tympani left but the mucous membrane was much thickened and discharged pus a change for the better was noticeable after applying the suction method for three minutes five times a day. All other therapeutic measures, with the exception of syringing with lukewarm water, were intentionally excluded. The condition of the mucous membrane daily improved until after some weeks the discharge entirely disappeared. It is obvious that in cases complicated by a polypus the latter had to be removed by surgical interference. My statements prove that the methodical application of suction can be considered as an effective therapeutic measure in suppurative diseases of the nose and that,

[2] Lehrbuch der Ohrenheilkunde, 4te Auflage, Stuttgart, 1901.
[3] Hartmann: Die Krankheiten des Ohres und ihre Behandlung, 8te Auflage, Berlin, 1892.
[4] Berlin, 1900. [5] S. 215.
[6] Having finished my essay, I find in the Medicin Klinik a report on my work concerning this method in which it is stated that Professor Seifert, of Würzburg, has already mentioned a method for sucking accessory cavities. For this purpose he introduces the olive of a previously compressed balloon of caoutchouc hermetically into one nostril, while at the same time the other must be closed by a finger, and then he uses the act of swallowing for producing a closure from behind. But it seems that this method has not frequently been applied and this has doubtlessly only been the case because, used in this way, it could by no means prove successful.
[7] The apparatus is manufactured by Messrs. Kühne, Sievers, and Neumann and it is to be obtained from Messrs. Mayer and Meltzer, 71, Great Portland-street, London, W.
[8] Leipsic, 1903.

moreover, it will henceforth be more frequently possible to effect a satisfactory cure without operation than has hitherto been the case. There is little risk that in this way a necessary operation should be deferred too long because it will soon be easy for the physician to recognise whether by the application of the suction method an essential change for the better can be effected or not. In a similar way an effect may be produced on the middle ear by aspiration from the Eustachian tube. In this case the same apparatus can be used as for application in cases of nose diseases. The rarefaction of air will by no means become so strong as to cause a hyperæmia which might be injurious. But, on the other hand, it is to be supposed that the mucous membrane of the tube, and especially of the entrance of the tube, will be favourably influenced by the suction. How far this method is able to supplement Politzer's method, or even to replace it in some cases, must depend on experience. But it must be considered as an advantage of the former that the patient easily learns how to apply it and that the aspirating power can only be raised to a certain degree which is precisely regulated by the elasticity of the suction ball.

The apparatus used for the suction method when applied to the nose has the same form as the one described above, but, of course, its mask is smaller as the two nostrils and their immediate neighbourhood only need be hermetically closed.

The suction apparatus applied to the nose.—When the apparatus is applied to the ear the tuba Eustachii may be considered as closed and therefore it is only necessary to close the ear outwardly in order to obtain a space where the air is rarefied; when, however, it is applied to the nose it is necessary to effect a thorough closure of the throat as well. Although in this case the application of suction is consequently rendered more difficult, and even requires some practice on the part of the physician to cause a suction effect with every patient, yet even here it will be an exception for the patient not to be able to learn to apply the suction apparatus to his nose himself. This is no less important here than when applied to the ear, for this method can only be crowned by success when sufficiently frequently repeated.

There are two possible ways of closing the nose towards the throat: (1) by making the patient pronounce the vowels, and especially *i* (long German *i* = English ee), and (2) by swallowing, as has been used for the same purpose by Politzer. It is always advisable to try first the former method. The vowel *i* (ee) must be pronounced in a strong manner and as clearly as possible. This latter point is of great consequence as a great many patients are inclined to produce a sound more like *e* (a) than *i* (ee), which very often spoils the effect. Should this method be of no avail, which will more frequently be the case with the old than with the young, it will be advisable to make the patient perform a forcible act of swallowing which is sure to prove successful. Very often it will be noticed that patients claim to perceive at the same time a deaf feeling in the ear. This is caused by the fact that the tube which has been opened at the moment of suction has transmitted the rarefaction to the middle ear. By swallowing without any simultaneous suction this deaf feeling will be removed at once. I can only state that though I have very frequently applied the suction method for more than a year, I never perceived the least injurious influence upon the patient. It happens, it is true, that the suction, especially when applied for the first time, makes itself felt in a disagreeable way to the patients and sometimes even they will complain of a headache caused by the aspiration process but the pain will soon be over. If, however, it should continue on the following day, which will be exceptional indeed, a less effective suction ball should be used.[9] If, on the other hand, the mucous membrane (Schneiderian membrane) should show a slightly bleeding spot and if this bleeding should occur at every sitting an interruption of the application will be required but very often this bleeding ceases the following day.

The apparatus is applied to the nose as follows. A small compress of cotton-wool is applied and then the mask is put on the nose and the ball is compressed, and whilst the patient is pronouncing a long *i* or is swallowing the ball is allowed to regain its former size. The aspiration effect is directly noticeable by a strong suction feeling. The mucous membrane, whatever may have been its condition before, markedly swells, becomes red, and is covered with a thin layer of mucous. Both reddening and swelling soon decrease and in cases in which both symptoms existed before they are frequently reduced after the first suction. Besides, it will soon be found that if there are fluid secretions in one or in several of the accessory cavities they have been discharged through their several openings, not always at once, it is true, but very often after the suction has been repeatedly applied and exceptionally not before the following day.[10]

Except in the rare case of occlusion of the excretory duct this effect fails very seldom and therefore we have in suction a method for diagnosing diseases of the accessory cavities scarcely excelled by any other for certainty, simplicity, and ease; however, this is only of value in connexion with the question whether there exists any disease of the accessory cavities at all. On the other hand, it is rather difficult to decide with certainty which of the accessory cavities has been attacked by disease, because it can only exceptionally be known from which side the pus has been discharged. If, even when other symptoms are missing, we must be satisfied with the general diagnosis this disadvantage need not be considered as one of great importance when the suction method is employed. The frequency of its application depends, of course, entirely on the character of the disease; as a rule it has to be applied the more frequently the more copious the discharge of matter or secretions, say, about five times a day. As soon, however, as improvement takes place and continues the daily applications can be reduced until there is no more discharge. In many cases of empyema which did not improve spontaneously I was in this way able to obtain a thorough cure after applying the suction method for about a fortnight. If, however, the improvement is slow the case unquestionably is an old one which has become chronic; such chronic cases always require a longer treatment. Should there be found a polypus or some bony sequestra surgical interference cannot be avoided. As for the other cases, however, the suction method alone ought at least to be tried.

According to my experience this treatment will always be followed by this amount of success, at least, that the pain will be alleviated at once. Therefore the patient will have no objection whatever to undergoing a longer treatment, because after some time he will only need a few minutes for the daily application of the apparatus. The results obtained hitherto justify the hope that in many cases—if not in all—a long, lasting improvement will be sure to be effected. In the same way this method can also be confidently applied in cases of ozæna due to rhinitis atrophicans fœtida. The removal of crusts, which so very often proves rather difficult, is easily managed by aspiration, for after having been loosened by it they can easily be removed by the patient blowing his nose. This has to be done in a correct way—i.e., each nostril must be blown separately and by no means together. In five cases which I treated with the suction apparatus, applying it several times a day, the crusts not only lessened every day but disappeared in two of the above-mentioned cases altogether after one week's treatment; the patients were also fully freed from an empyema of the accessory cavities. Whilst some of these patients were allowed to stop the treatment for a time after the apparatus had been applied for some weeks only, others had to apply it to the nose once or twice a day for months and even for years in order to guarantee the complete cure of their complaint. Strict individualising in these cases as in many others will, of course, be required according to the character of the disease, which may require a more or less frequent application of the suction apparatus.

It must be mentioned that the hyperæmia caused by the suction treatment of the nose as well as of the ear has a most favourable influence, especially in cases of rhinitis; how far, however, the accessory cavities are favourably influenced by it too cannot yet be decided with certainty. Though I am fully aware of the fact that the suction method can scarcely be considered as a never-failing treatment for every disease within so difficult a region as these accessory cavities, I am, however, fully convinced that its advantages are evident enough to range it amongst the medical measures for treating such diseases.

Dieringhausen.

[9] A weaker ball should always be used with children.

[10] The position of the antrum of Highmore, which is rather unfavourable for the suction method, can easily be corrected, if necessary, by a lateral position of the head. Also it ought to be noticed that the discharged secretions do not always appear at the anterior nares but frequently in cases of disease of the sphenoid cells, and perhaps even of the hinder ethmoidal cells, they flow into the pharynx and are then only discharged by hawking.

DELAYED CHLOROFORM POISONING.

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THE condition of delayed chloroform poisoning has not yet received general recognition by surgeons, though its importance can hardly be over-estimated. Stiles and McDonald [1] in a recent paper have drawn special attention to the subject and have presented a typical clinical and pathological picture of the condition. A case has recently come under our attention which corroborates very largely their observations but which presents also some additional points of interest. The literature on the subject has been so fully gone into in the above-mentioned paper that we deem it unnecessary again to deal with it.

The patient, a girl, aged three and three-quarter years, on the recommendation of Dr. R. Cross of Linlithgow was admitted to McKay Smith ward on April 8th, 1905. Nine months previously there was a history of an injury resulting in stiffness of the right elbow-joint which had become more swollen and painful after treatment by a bonesetter. On admission there were general synovial thickening of the joint and marked enlargement of the olecranon process of the ulna. There was no local abscess or sinus. The joint was excised by a posterior incision on April 11th, the upper end of the ulna and the head of the radius being removed. The total duration of chloroform anæsthesia was 30 minutes, five drachms of pure chloroform being used. No carbolic acid or strong antiseptic was used during the operation. Nothing exceptional was noted in the child's condition after operation, the pulse being, however, somewhat small, 132 per minute. During the afternoon she was sick and vomited once some bilious fluid and remained somewhat restless for the rest of the day. On the 12th the house surgeon (Dr. H. N. Fletcher) noted that she had had a restless night and vomited twice some greenish bilious material. She was very pale and complained greatly of thirst, the pulse being small and weak. The temperature remained slightly subnormal. The wound was examined and appeared to be healthy, there being no sign of hæmorrhage. A saline infusion given per rectum was not retained. A repetition of saline injection on three further occasions was retained. The child continued to be very restless all day and complained greatly of thirst. About 6 P.M. she became comatose, vomiting a considerable quantity of coffee-ground material two hours later. She never regained consciousness up to the time of her death at 5.30 A.M. on April 13th, 42 hours after operation. The temperature remained subnormal from the time of the operation. Although very restless the child did not cry out or shout. Her pupils remained markedly dilated throughout.

Necropsy.—A post-mortem examination was made on April 14th. The body was that of a fairly well-developed child. Rigor mortis was general. The right elbow-joint had been excised by a posterior incision. The upper end of the ulna and the head of the radius had been removed. The external wound looked perfectly healthy. On opening it up the tissues were blood stained but there was no evidence of pus formation in any part. Portions of tissue were excised from various points and the bone marrow was scraped from the open medullary cavities of the bones for microscopic examination. Both pleural and pericardial sacs were perfectly healthy. There was no glandular enlargement in the mediastinum. The thymus was not enlarged. There was a small amount of post-mortem clot in the right side of the heart. The cavities and orifices were not dilated, nor was there any hypertrophy. The valve segments were competent and quite healthy. The muscle was pale but firm. It showed no naked-eye evidence of fatty degeneration, nor was there any evidence of any interstitial changes. There was a tuberculous gland at the root of the right lung. The whole of the lung tissue was congested. There was no trace of consolidation, nor was there any evidence pointing to a bacterial infection. Apart from the congestion, the lung tissue, the pleura, the bronchi, and the vessels showed no abnormal condition. There was no peritonitis or other abnormality in the peritoneal sac. The stomach contained some altered blood, but no trace of ulceration or erosion of its mucous membrane could be detected. The pancreas showed nothing abnormal. The intestines appeared quite healthy. The mesenteric glands were slightly enlarged, pale in colour, but showed no evidence of tuberculosis. The liver was distinctly and uniformly enlarged. The surface was quite smooth and the colour almost of a canary yellow tint. On section there was seen to be an intense degree of fatty change. Throughout the greater part of the organ this was uniformly distributed, the outlines of the lobules were lost, and no separation could be made out between the central and peripheral zones. There were irregular areas in the right lobe, where the fatty change was not so advanced. Here the lobules could be made out and the fatty change was seen to be most intense at the peripheries of the lobules. No other abnormal change could be made out in the liver. The spleen was not enlarged. It was pale but firm and showed practically no pathological change. Both kidneys were slightly enlarged and were very pale. The capsule stripped readily, leaving a smooth surface. The stellate veins were not specially prominent. On section there was slight swelling of the cortex both superficial and deep. It showed an intense pallor, but the yellow tint so marked in the liver was not present. The Malpighian bodies were not prominent. The pyramids showed no abnormal condition. The vessels were quite healthy. There was no evidence of any septic foci or any evidence of tuberculosis. The suprarenal capsules were both enlarged, firm, and of a bright canary yellow tint. On section the yellowish colour extended throughout the cortex and the medulla. The bone marrow was pale but showed no naked-eye change. The brain was not examined.

Histology of the lesions.—Portions of all the organs were fixed in a saturated solution of perchloride of mercury or in a 10 per cent. solution of formalin. Sections were stained with hæmatein and eosin, methylene blue and eosin, and specially for fat with sudan iii., scharlach R., and osmic acid. Others were prepared by Marchi's method and counter-stained with licht grün or with rubin and orange.

The striation of the fibres of the heart was distinct and there was no segmentation of any of them. At places there was a slight amount of granularity in the body of the fibre but no fat could be demonstrated. There were no excess of pigment and no evidence of any increase in the interstitial tissue. The nuclei of the muscle fibres stained perfectly with hæmatein. The blood-vessels were not congested nor did their walls show any thickening. No fat could be demonstrated in the endothelial lining of the vessels.

The capillaries in the alveolar walls of the lungs were dilated to a moderate degree but there was no marked evidence of acute congestion. The alveoli contained a few catarrhal cells but no inflammatory exudation was found in any part of the lung. The bronchi were quite healthy, the ciliated epithelium was intact, there was no desquamation of the epithelium, nor was there any congestion of the vessels in the bronchial walls. Fat was present in the form of minute droplets in many of the cells in the alveolar septa (Fig. 1). It was not easy to determine the exact nature of these cells because many of them were much swollen and obscured by the fat granules. Some of them appeared to be connective tissue cells, but undoubtedly a great number were the endothelial cells lining the alveolar capillaries. In some of the vessels a few free cells containing fat granules were seen but in none of the vessels was there any large accumulation of fat such as one finds in cases of fat embolism. Fat globules were also seen in some of the cells lining the alveolar spaces. Some of the cells containing fat which were found in the alveolar walls were probably cells which had migrated from other parts or which had passed by the lymphatic channels to the lung. That this passage was taking place is seen by a study of the spleen and the lymphatic glands. Still we are forced to the conclusion that a great deal of the fat was a local production formed in the cells by the direct action of the poison.

In regard to the liver, in sections in which the fat had been dissolved out by chloroform there was an irregular swelling of the liver cells, leading to in many places an almost complete closure of the capillaries between the rows of liver cells. The liver cells were markedly vacuolated, and

[1] Stiles and McDonald: Scottish Medical and Surgical Journal, August, 1904, p. 97.

in those in which the cytoplasm was not wholly destroyed it was very granular and formed bridges separating the vacuoles from one another. The nucleus in all of the cells stained perfectly with hæmatein. In freshly prepared sections stained for fat it was seen that all the cells from the centre to the periphery of the lobules were crowded with fat globules. The globules were mostly small but at places large globules almost completely

FIG. 1.

Lung of child. × 200 diameters.

filling the cells were seen. In certain areas where to the naked eye the fatty change appeared less marked it was seen on microscopic examination that all of the cells contained fat but that it was specially abundant in the peripheral zone of cells and that there the globules were larger than at the centre. Fat was also seen in the cells lining the bile capillaries and in the endothelial cells of the blood capillaries. In a few of the hepatic veins there were cells

FIG. 2.

Kidney of child. × 200 diameters.

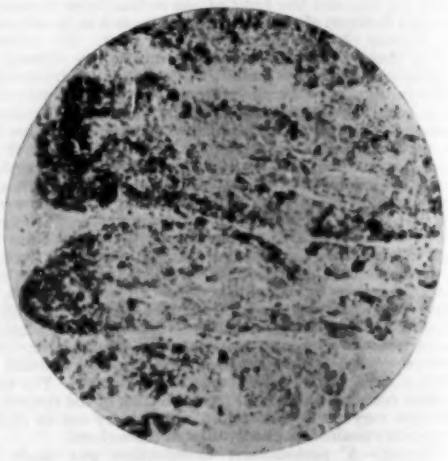
containing a good deal of fat and these cells were undoubtedly secreting cells of the liver. We were not able to detect free fat in any of the vessels. Apart from the fatty change in the liver cells there appeared to be no other abnormal condition of the liver. There was certainly no increase of fibrous tissue nor any cellular increase in the portal spaces—in fact, nothing lending any support to the view that some other pathological change preceded the acute fatty degeneration.

As to the kidney, the cells in all of the tubules, collecting as well as secreting, were swollen and granular and in paraffin sections there was very distinct vacuolation. The nucleus in most of the cells stained perfectly, though in some of the cells of the convoluted tubules there was karyorrhexis. There was no evidence of chromatolysis. In very few of the tubules were there any desquamated epithelial cells. There was very extensive fatty degeneration in almost every cell of every tubule. Only here and there a few of the collecting tubules showed no fat. The fat globules varied much in size but were mostly small and were situated in the deeper part of the cells (Fig. 2). The glomerular capillaries were congested but there was no evidence of any cellular increase in the tufts. The epithelium of Bowman's capsule showed no proliferation. In a few of the Malpighian bodies between the tuft and Bowman's capsule there was a granular exudation. Fat in the form of very fine globules could be demonstrated both in the endothelium of the capillaries and in the epithelium lining Bowman's capsule.

The larger vessels of the interstitial tissue and the straight vessels in the medulla were dilated and filled with blood. The larger veins and arteries showed no special changes. No fat either in the form of free globules or as globules in the cells could be demonstrated in them.

In the case described by Stiles and McDonald no change was discovered in the suprarenal capsules. In our case there was very extensive fatty degeneration of the whole of the glandular cells. This degeneration was most marked in the cells of the cortex and especially of those near the surface (Fig. 3). There was also quite definite fatty degeneration in the endothelial cells lining the capillaries.

FIG. 3.



Suprarenal body of child. × 200 diameters.

With regard to the mesenteric glands, unfortunately these were the only glands examined. In the lymph spaces at the periphery of the lobules there were numerous cells containing fat. So abundant were these that they mapped out very distinctly the lobules of the gland. The gland cells proper showed no change, nor could any change be made out in the vessels. It seems, therefore, most likely that the cells containing fat were migratory and had passed by lymphatic channels to the glands.

Some of the smaller arteries of the spleen showed marked swelling and hyaline degeneration in their middle coats. There were a few large mononucleated cells in the lymphatic spaces containing fat globules. No other abnormal change was made out.

In the pancreas there were scattered irregular areas of necrosis in which the nuclei did not stain with hæmatein, but as the post-mortem examination was not made till several hours after death no importance can be attached to these. The rest of the cells, both of the gland itself and

of Langerhans' islets, showed no abnormal condition. No at could be demonstrated.

There was no abnormal condition in either the muscular or submucous coats of the stomach. The secreting cells showed marked changes. In sections prepared by the ordinary paraffin process the cells, both central and peri-

FIG. 4.

Stomach of child. × 45 diameters.

pheral, were swollen, granular, and vacuolated, but the nucleus stained perfectly throughout. In sections specially stained for fat the peripheral cells were filled with globules which reacted to all the "fat" stains, while the central cells also showed a moderate degree of fatty degeneration (Figs. 4 and 5). The endothelial cells of the capillaries

FIG. 5.

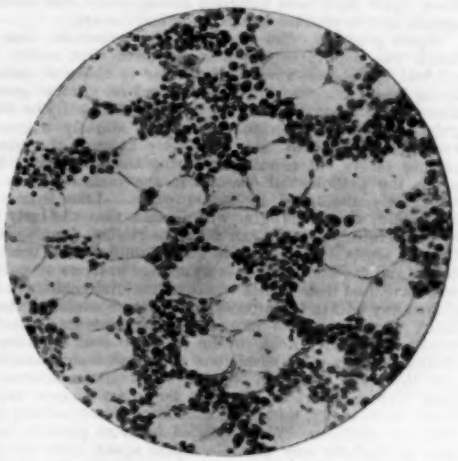
Stomach of child. × 200 diameters.

between the glands were swollen and contained numerous fat globules in a state of fine division.

The bone marrow (Fig. 6) was taken from the femur. There was very little, if any, proliferation of the blood-forming elements of the tissue. The fat cells were present in a greater amount than is usually found at this early age. The ratio of nucleated red cells, both normoblasts and megaloblasts, to the formative cells of the white series was rather larger than normal. There was certainly no increase, but if anything a diminution of the leucoblastic elements. Comparing the specimens from this case with those of a child of the same age also with tuberculous disease but who died from diphtheria the contrast was very striking. In the latter case there were an almost entire disappearance of the fat cells and a very complete leucoblastic transformation of the tissue. The changes then in the bone marrow were similar to those observed by Dr. W. E. Carnegie Dickson, to whom we are indebted for examining and reporting on the specimen, in other cases of tuberculous disease in children. We need not specially refer to these, as the work by Dr. Dickson we hope will be published shortly. On the other hand, the changes are entirely unlike those seen in cases where there was a definitely septic element in the case.

We very much regret that no examination of the blood was made during life but an examination of the blood in the vessels in the bone marrow and in the various organs showed very few leucocytes and pointed to a leucopenia rather than a leucocytosis accompanying any septic condition. Pieces of tissue were cut out from various places in the neighbourhood of the wound and were examined microscopically. There were various collections of polymorphonuclear leucocytes at places, with areas of hæmorrhage. No bacteria of any kind were found though a considerable number of specimens stained in various ways were examined. The bone marrow from the opened medullary cavity was also examined. This shows a hæmorrhagic infiltration and a considerable invasion by polymorphonuclear leucocytes. No bacteria could be demonstrated.

FIG. 6.



Bone marrow of child. × 200 diameters.

Remarks.—1. *Clinical.*—If we are to accept the view of Nothnagel, Ostertag, and others that chloroform produces the pathological changes indirectly in the tissues by destroying the red blood corpuscles increasing anæmia should be a prominent sign and one which was markedly noticeable in the present case. Thirst was a marked symptom, the child constantly crying out for drinks. The character of the vomiting differed somewhat from that of most recorded cases. It is interesting to note that the child vomited two or three times on the day prior to operation. She vomited on two occasions during the night following the operation some greenish-yellow fluid. There was never at any time any retching. Six hours before her death she vomited some coffee-ground material. We can exclude in this case the mechanical action of repeated retching as a cause of the hæmorrhage into the stomach. We are also able to exclude, as we shall afterwards show, any septic element in the causation of the hæmorrhage. Delirium, a prominent symptom in most cases, was absent and although marked restlessness was present there was none of the crying or shouting recorded in other cases. It will be seen that in this case the clinical symptoms presented in many respects the picture described by Stiles and McDonald, Guthrie, and others. There was no sign of jaundice throughout, although an examination of the urine revealed a slight trace of bile to ordinary reagents. Extreme pallor was, however, present to such a degree as to suggest to one of us the possibility of hæmorrhage and the necessity of examining the wound on the day following the operation.

2. *Pathological.*—It will be seen that the pathological appearances were in the main similar to those of the case described by Stiles and McDonald. The main objections to the view that the clinical symptoms and the pathological appearances in these cases are due primarily to chloroform poisoning are founded on the facts that similar symptoms and similar pathological appearances are found in patients who die as a result of fat embolism and in those who are poisoned by chemical agents or by septic products. We must deal with these in turn.

Fat embolism.—It is only necessary to mention this to exclude it. Though the clinical manifestations are very similar in the two classes of classes fat embolism is rarely fatal and one usually has no difficulty in fatal cases in showing large areas of the pulmonary capillaries filled with oil drops. In our case no free oil was found in any of the lung capillaries though careful search was made for it. Unfortunately the brain was not examined.

Chemical agents.—These were absolutely excluded. The preparation of the skin was carried out in the following manner. It was first thoroughly cleansed with lysol (one drachm to 20 ounces of water) and fluid soap, then rubbed over with ether, washed with a solution of carbolic acid (1 in 20), sponged with sterilised water, and a soaking of gauze wrung out of sterilised water was applied for 24 hours. The same cleansing process was repeated before the operation. We cannot imagine that in this method of preparation there could have been sufficient absorption of the chemical agents used to produce any pathological change.

Septic products.—The more serious objection that the death was due to sepsis must be dealt with fully. The clinical symptoms were very similar to those of patients dying from intense septic infection and on clinical grounds alone we admit that the two conditions can hardly be distinguished. The temperature remained slightly subnormal throughout, a point not absolutely against the idea of intense sepsis but certainly pointing the other way. Then again, the pathological changes in the various organs may be exactly simulated in septic cases. Like Stiles and McDonald, we cannot agree with Guthrie that the fatty liver of chloroform poisoning can be distinguished from the fatty liver of sepsis. One of us is quite familiar with the same colour and the same diffuse fatty change in livers of patients who have died from sepsis where chloroform could not have played any part in the process. It must be admitted that in many of the recorded cases a septic cause has not been wholly excluded. Even in the case reported by Stiles and McDonald they were suspicious of a septicæmic condition, and the lungs yielded a pure culture of pneumococcus. In their further report of the case they have shown, and we think conclusively, that the pneumococcus had nothing to do with the condition. We have tried as far as possible in our case to exclude any possible septic agent. As we have already indicated, the wound was absolutely healthy; microscopic examination of the various parts of the tissues which were exposed at the operation and of the exposed bone marrow gave no histological or bacteriological evidence of local organismal infection. We attach a considerable amount of importance to the histological examination of the bone marrow of the femur, a feature to which attention has not been directed in previously reported cases. Muir and others have shown that the reaction of the bone marrow to septic infection is a very delicate one. There are very early a congestion of the vessels, an increase of the leucoblastic elements, and a disappearance of the fat cells. Carnegie Dickson[2] has shown that this congestion appears in two or three hours after infection and that the leucoblastic transformation is well marked in from 24 to 48 hours. We, of course, know that in certain very severe infections, and occasionally in the less severe, there is a leucopenia with practically no reaction in the marrow. But in such a case as we report—a young child where the bone marrow is in an actively developing condition, where there has been no long-standing disease which might cause an exhaustion of the marrow, and where no trace of bacteria could be found locally in the various organs or in the marrow—we think it extremely unlikely that it could come under this class of cases. We think, therefore, that we are justified in excluding any bacterial poison as a causal agent in this case.

Having thus excluded death from fat embolism and a poisoning by bacterial infection or by any antiseptic we feel that we are entitled to place this among that class of cases, fortunately still not numerous, where death can only be attributed to delayed chloroform poisoning. The main symptom in most recorded cases was retching and vomiting. In our case this symptom was much less prominent as the child vomited on only three occasions from the time of the operation. There had been no retching, and coffee-ground vomit was observed only six hours before death. At the necropsy a considerable quantity of a similar fluid was found in the stomach. How is this blood to be accounted for? There was no obvious lesion of the gastric mucous membrane. The bleeding may be partly accounted for by the rupture of minute over-distended capillaries, this distension being due to obstruction in the liver owing to the great swelling of the cells there. Careful examination has shown, as we have already indicated, a fatty change in the endothelium of the capillaries in various organs and this is quite well marked in the mucous membrane of the stomach. This we believe to be the main factor and the later occurrence of it in our case supports the contention that there is a rupture of the capillaries due to a fatty degeneration of their lining cells. No doubt retching would aid this rupture and in cases where there is "chloroform sickness" this coffee-ground vomit would be an earlier symptom. The coma which seems to be associated with all the cases may be accounted for in various ways. We may explain it by the formation of some poisonous products allied to acetone formed from the fat or from intermediate substances in the fat development. On the other hand, we find the destruction of almost all the secreting and excreting cells in various organs—e.g., liver, kidneys, suprarenals—and consequently there must be an accumulation in the system of the ordinary injurious products of metabolism. Added to this the fact that wasting of muscles, &c., takes place apparently in excess during the processes of fatty degeneration, we find the factors for producing an auto-intoxication.

Guthrie[3] has maintained that in these cases the chloroform has acted merely as a helper on of a pre-existing process. The very small number of deaths as compared with the number of chloroform anæsthesias gives some support to this view. Still, though we cannot disprove his contention we agree with those who maintain that the condition is a primary one and wholly due to the chloroform. It has been shown conclusively by experiments on animals that this extreme fatty degeneration can be produced in healthy organs after subcutaneous injection of chloroform or after prolonged inhalation of the drug. One of us has shown that extreme fatty degeneration in the liver and kidneys can be produced in healthy rabbits in from 24 to 28 hours after injections of bacillus diphtheriæ and we see no reason to suppose that such a protoplasmic poison as chloroform may not act as rapidly. If chloroform can produce such gross pathological lesions, lesions which are practically incompatible with life, why, it may be asked, are there so few cases of death from its action? The factor which determines that only a very small proportion of patients show these gross pathological lesions we cannot explain and we must therefore still attribute it to idiosyncrasy or susceptibility.

[2] W. E. Carnegie Dickson: Thesis, University of Edinburgh. (Not yet published.)

[3] Guthrie: THE LANCET, Jan. 27th, 1894, p. 193.

CONGENITAL MULTIPLE OCCLUSIONS OF THE SMALL INTESTINE.[1]

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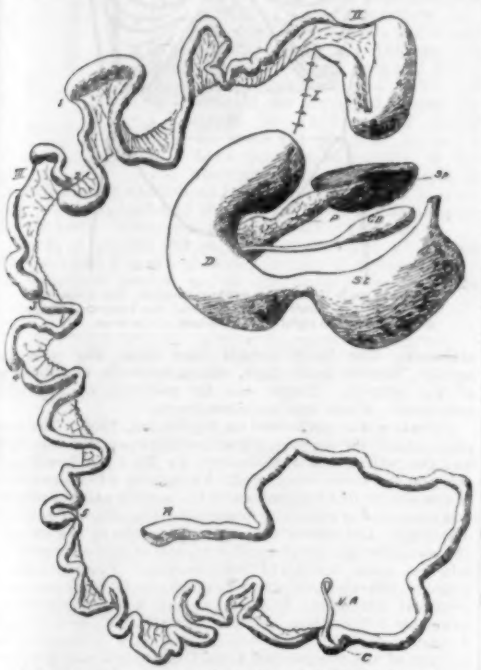
THE small intestine is less often the seat of congenital malformations than either the œsophagus above or the colon, the rectum, or the anus below. The commonest situations for congenital malformations in the small intestine are: (1) the duodenum at the site of the opening of the bile and the pancreatic ducts; (2) at the junction of the jejunum with the duodenum; and (3) the ileum, a short distance above the ileo-cæcal valve, at the point where the omphalo-meseraic or vitelline duct is given off. The following case is, in

[1] The specimen was shown at a meeting of the Society for the Study of Disease in Children held on Jan. 20th, 1905.

my opinion, unique in that the small intestine is occluded in no less than three situations, while in five other places the lumen of the bowel is practically obliterated by annular constrictions giving rise to a localised distension of the intestine immediately above, and a relative collapse below, the points of constriction.

This remarkable specimen was taken from an infant who was admitted into the Children's Hospital, Birmingham, under the care of Mr. C. A. Leedham-Green as a case of "imperforate anus." The child, a seven months baby, was well developed, but the skin was of a peculiar coppery hue (it looked like that of a half-Indian baby) and the nurses in the ward named the child the "bronze baby." Soon after admission to hospital an enema was given, a soft gum-elastic catheter being easily passed three or four inches up the rectum, and a large motion of meconium of normal appearance was passed. This result, of course, proved that the rectum was patent. The child had vomited all the milk that had been taken from birth. Death took place nine days after admission, operative interference being deemed inadvisable.

At the necropsy all the organs were found to be healthy with the exception of the small intestine. On opening the abdomen the most conspicuous feature was a hugely distended duodenum which was of even greater volume than the stomach. The cause of this distension was found to be a complete obliteration of the intestine at the duodeno-jejunal juncture, shown by the line -o-o-o-o- in the figure and marked I. The wall of the distended duodenum was



A drawing reduced to exactly half size. I, II, III. Sites of occlusion. 1, 2, 3, 4, 5. Sites of constriction. St, Stomach. D, Duodenum. P, Pancreas. G B, Gall-bladder. Sp, Spleen. C, Cæcum. V A, Vermiform appendix. R, Rectum.

obviously hypertrophied. The stomach wall was also hypertrophied. The pylorus was normal and the œsophagus was healthy. The stomach and the duodenum were void of contents. The first two and a half to three inches of the jejunum were distended in the peculiar manner shown in the figure and this distension was due to another obliteration of the bowel, marked II in the figure. At II the bowel was merely represented by an impervious thickening of the free edge of the mesentery half an inch in length. Still lower down in the intestine, at III in the figure, there was an exactly similar condition present—viz., a complete obliteration of the lumen, the bowel being again represented by a thickening of the free edge of the mesentery. In addition to these three situations in which the bowel was completely occluded there were five other places, 1, 2, 3, 4, and 5, in which the bowel showed annular constrictions of such completeness that immediately above the constrictions the intestine was distended, while below it was relatively collapsed for a short distance. The wall of the bowel in these distended parts was so thinned that the contents of the gut were visible through the wall, and these contents appeared to the naked eye to resemble ordinary meconium. Of these constrictions the most marked was that most highly situated, viz., 1, whilst the lowest, 5, was the least obvious, and, in fact, the whole series of five shows a progressively decreasing order in completeness of the constriction. The figure shows the situation of the cæcum and of the vermiform appendix and so it is clear that all these abnormalities are situate in the jejunum and perhaps in the upper part of the ileum.

Some other points of interest worthy of note in connexion with this case are the following: 1. Normal meconium was passed as a result of an enema soon after the admission of the child into hospital, and yet neither bile nor any ingested products—e.g., desquamated epithelium—obtained from the amniotic fluid could have gained access to the intestine below the duodeno-jejunal juncture. This shows that, although bile and desquamated epithelium contribute normally to the formation of the meconium they are not essential and that the meconium is chiefly derived from the secretion of the alimentary canal. It may be contended that both these products had found their way into the bowel before its lumen had become obliterated; this is possible, but it must have occurred very early in intra-uterine life, because the occlusions at II and III must be of very early formation, if, indeed, the intestine was pervious from end to end at any date. In connexion with the part played by the bile in the formation of the meconium it may be borne in mind that in cases of congenital obliteration of the bile ducts it is the rule for normal meconium to be passed soon after birth but for all subsequent motions to be devoid of bile pigment.[2] Foster speaks of a considerable quantity of meconium being found in the fœtus in cases where the liver has been absent.[3] 2. With so complete an obstruction as occurs at the duodeno-jejunal juncture one might have expected to find the bowel below in a state of collapse and yet instead of this we find that immediately above the occluded parts II and III and the constrictions 1 to 5 the bowel is actively distended with what appeared to be ordinary meconium. It is clear that the whole of the meconium within the jejunum, the ileum, and the colon must have been secreted from the glands in the intestinal walls and that this secretion is capable of going on in a segment of intestine completely cut off above and below—e.g., in the segment between I and II, and that between II and III. 3. Nine days is a long time for an infant—especially a premature infant of seven months—to survive without any food.

Congenital malformations are generally said to be either the result of an intra-uterine peritonitis giving rise to bands of adhesion which cause strangulation, or to be due to an arrest of development. In the present case there were no signs of any peritonitis, either recent or old, and so we are led to adopt the second somewhat unsatisfactory theory and say that the anomalies described above are due to an arrest of development. It seems to me, however, that rather than being due to an arrest of development these abnormalities are due to an accident in the course of development of the nature of strangulation and that two stages may be distinguished in the process—viz., a strangulation at the duodeno-jejunal juncture during the formation of the duodenal loop and later the formation of a number of more or less complete volvuli during the process of lengthening of the intestine and the formation of its coils. It will be remembered that the duodeno-jejunal juncture is the most fixed portion of the small intestine, being held in position by the superior mesenteric vessels which groove its anterior surface and by a strong fibrous band descending from the left crus of the diaphragm and the tissue round the cœliac axis. This band, better marked in the fœtus and young child than in the adult, contains plain muscular fibres and is called the musculus suspensorius duodeni.[4] This, moreover, is the point where the gut first receives a full investment of the peritoneum. The duodenal loop is formed by the twisting of the embryonic stomach, which early occupies

[2] Rolleston: Diseases of the Liver, Gall-bladder, and Bile Ducts, p. 647.
[3] Foster: Text-book of Physiology, vol. iv., p. 1527.
[4] Quain's Anatomy, vol. iii., Part iv., p. 102.

a median position with its surfaces right and left, its greater curvature posterior and its lesser curvature anterior. The pyloric end becomes tilted away from the vertebral column in such a way that the right side of the stomach becomes its posterior surface and the duodenal loop is thrown over to the right side of the abdomen. This duodeno-jejunal juncture is therefore a very likely place for an intra-uterine obstruction to occur, and statistics, in fact, support this view, for it is the second situation in point of frequency for congenital malformations of the small intestine to occur. If, then, we grant that this was the main obstruction it is fair to conclude that later in intra-uterine life when the small intestine, originally short and straight, lengthened and became thrown into coils it underwent an amount of twisting with the production of a number of volvuli of more or less complete formation and that this twisting gave rise to the complete occlusions II and III, as well as to the constrictions 1 to 5. In support of this view it is to be remembered that in these two situations the thickened free margin of the mesentery represents the intestine—i.e., the intestine is not completely obliterated but is represented by impervious fibrous cords, the free margin of the mesentery.

I have not been able to find records of a case similar to the above. Hirschsprung of Copenhagen in a thesis on congenital occlusions of the small intestine, of which an epitome is to be found in the *Medico-Chirurgical Review* for 1862, collected records of 31 cases. Of these, in 16 (more than 50 per cent.) the lesion was situate in the duodenum; in six in the ileum close to the cæcum, and therefore probably connected with the omphalo-meseraic or vitelline duct; and in nine cases the lesion was situate in intervening portions of the gut. In no instance, however, was the abnormality repeated in the course of the canal and it is in the multiplicity of the occlusions that the present case differs from those in the above series.

In conclusion, I would express my thanks to Dr. A. E. R. Weaver, the resident medical officer of the Children's Hospital, Birmingham, for his excellent drawing of the specimen, and to Mr. Leedham-Green for his courtesy in allowing me to publish this case.

Birmingham.

A CASE OF SACCULATED ANEURYSM OF THE ABDOMINAL AORTA, TREATED BY THE INTRODUCTION OF SILVER WIRE AND THE PASSAGE OF CONSTANT CURRENT:

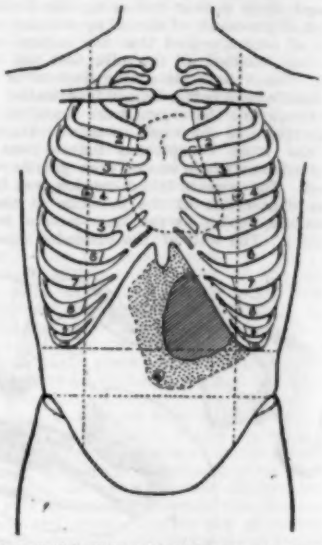
WITH DESCRIPTION OF A SIMPLE METHOD OF INTRODUCING THE WIRE AND INSULATING THE CURRENT.

BY CORNELIUS A. GRIFFITHS, F.R.C.S. ENG.,
ASSISTANT SURGEON TO THE CARDIFF INFIRMARY.

THE patient, a male, aged 37 years, was admitted to the Cardiff Infirmary on July 1st, 1904, complaining of a lump in the epigastric region, with continuous pain in the left side and pain of an acute boring character in the back. Stated very briefly his history was as follows. By profession he was a travelling photographer and he dated his illness back to a day about two months previously when lifting the bag containing his rather heavy camera and other impedimenta, and giving it a swing over his shoulder, he first noticed pain in his back which he attributed to a strain, because he lifted the case rather more jerkily than usual—being in a hurry on that occasion. He had always been a temperate man. No history of syphilis could be obtained, but he had a gonorrhœa some 20 years ago; there was no history of rheumatism.

On admission the patient presented the appearance of a man suffering from continual pain. The tumour in the abdomen occupied mainly the epigastric region and was almost entirely on the left of the middle line; it became lost under the ribs and extended downwards nearly to the umbilicus, its size being about that of a cocoanut; it caused some bulging of the epigastrium and was distinctly a pulsating tumour with a well-marked systolic bruit; in short, no doubt was entertained as to the aneurysmal nature of the tumour, and the diagnosis was that of a sacculated tumour of the commencement of the abdominal aorta (Fig. 1). Pain was complained of in the back and on the left side and this was said to be constant; pain in the epigastrium also followed the taking of food and there had been occasional retching but no actual vomiting. The pain in the back was the most complained of and was bad enough to keep him awake at night. The patient was an intelligent man and said that there had been no increase in the size of the tumour lately, but he thought it had become harder and although at one time he was able to "squeeze it all away" he was now unable to do so. Pain was also complained of in both legs below the knees but not in the thighs or the lower

FIG. 1.

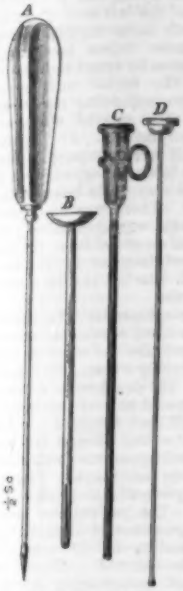


The lined area is that of the evident tumour; the dotted area is that of comparative dulness round the tumour merging above and to the right in the dulness of the liver.

abdomen. The heart sounds were clear, the pulse was regular, tension fairly high, with a suspicion of thickening of the arteries. There was no evidence of any other aneurysm. There was no albuminuria.

Operation was performed on August 3rd, 1904. The usual preparations for carrying out an aseptic operation were made and the patient was anæsthetised by Dr. Cyril Lewis, ethyl chloride and ether being used. An incision a little to the left of the middle line was made over the tumour and the abdomen was opened, the aneurysm presenting immediately below the diaphragm and above the lesser curvature of the stomach, the viscus being closely applied to, and stretched around, the left and lower borders of the aneurysm. I had intended, if possible, placing a temporary ligature around the aorta on the proximal side of the tumour, but this was not practicable, as the sac left no room between its walls and the diaphragm. A spot devoid of large vessels was now selected on the surface of the tumour and a small circle inclosed in a purse-string suture, and through the centre of this a fine long metal trocar and cannula were thrust well into the sac. The trocar was withdrawn, the cannula remaining in position, and through this was introduced a vulcanite cannula for insulating purposes. Next some fine silver wire was introduced into the sac through the double cannula. While putting in the wire I tried to avoid the communication between sac and aorta by keeping the end of the cannula directed to one or other side of the sac, with what success will appear later. After a foot or so of wire was in the wire "kinked," so it was cut off flush with the cannula and pushed home with the ramrod which I had specially prepared with a "cupped" end for this purpose and found that it worked very satisfactorily. Some more wire was then pushed through and connected with the negative terminal of a constant current battery, the circuit being completed through the patient by means of an electrode placed on the thorax. A current of from 15 to 25 milliampères was given and continued

FIG. 2.



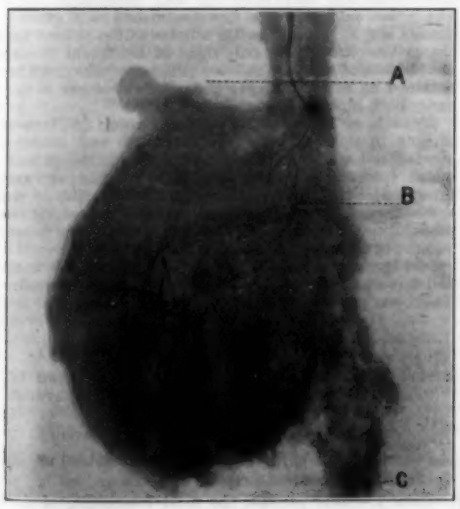
A, Metal trocar. B, Metal cannula. C, Vulcanite cannula. D, Ramrod.

for 15 minutes; at the end of this time it was noticed that the aneurysm felt harder and the expansile pulsation had grown less if it had not quite disappeared. The wire (about six feet) was then pushed home with the ramrod, the cannulæ were withdrawn, the purse-string suture was tied, and the abdomen was closed. It was noticed after the abdomen was closed that the bulging caused by the tumour had almost disappeared. The patient suffered greatly from shock and although consciousness was recovered restlessness was very marked, the patient throwing himself about and exhausting what little pulse remained and he died five and a half hours after operation.

The post-mortem examination showed that there had been no hæmorrhage. The heart was healthy; the arch of the aorta showed signs of atheromatous changes. The aneurysm came off from the main trunk of the abdominal aorta and communicated with it by means of a narrow elongated mouth about one and a half inches in length. The sac was filled with a dark clot and coiled wire, a double loop of which had entered the aorta and passed for about two and a half inches up into the thoracic aorta. I have taken a radiograph of the aneurysm and adjoining parts of the aorta exactly as removed from the body in order to show (Fig. 3) the disposition of the wire in the sac and its passage into the aorta. There was no erosion of the vertebræ.

This is at present the only case of aneurysm of a large vessel in which I have had an opportunity of trying the wire and electrolysis method and at first sight it does not seem encouraging, but the cases reported by Maunsell,[1] H. A. Ballance,[2] and others lead one to hope that the cure of these distressing cases is becoming surgically possible, hence I record this case hoping that some of its points may prove useful.

FIG. 3.



In the radiograph A marks the level of the diaphragm, the thoracic aorta appearing above. B marks the wire coiled in the aneurysm. C, Continuation of the abdominal aorta.

For carrying out my wishes in the preparation of the very simple instruments (Fig. 2) used during the introduction of the wire I am indebted to Messrs. Down Brothers. In actual practice I found the instrument work quite easily, the "cupping" at the end of the ramrod engaging the end of the wire and running it down the cannula without trouble. I was agreeably surprised to find that there was practically no hæmorrhage from the sac on introduction of the trocar and although a slight trickle took place at the side of the cannula while the wire was being introduced it stopped soon after the electric current was turned on.

That the passage of the wire into the trunk of the main vessel is a point to be reckoned with is apparent on a glance at my radiograph. I certainly tried to prevent this by the position of the mouth of the cannula but unsuccessfully; it will be observed that it was a double loop of wire and not the ends of wire which escaped. Perhaps if one used short lengths of wire this might not happen. The immediate clotting within the sac by the passage of a small current I think is a distinct gain.

The rapidly fatal termination in my case, I have no doubt, was favoured by the interference with the functions of the stomach, which, as I have already stated, was stretched around the left and lower borders of the aneurysm. The patient failed rapidly before the operation and became increasingly anxious that something should be tried to relieve him even if it were not successful. Iodide of potassium was administered on admission, five-grain doses increasing to 15 grains three times daily, and for a couple of weeks before the operation the patient received ten grains of calcium chloride night and morning.

Cardiff.

[1] Brit. Med. Jour., June 18th, 1904.
[2] THE LANCET, Oct. 1st, 1904, p. 939.

FRACTURE OF THE HEAD OF THE RADIUS.

BY ROBERT KNOX, M.D. EDIN., M.R.C.S. ENG., L.R.C.P. LOND.

THE accompanying skiagram illustrates a form of fracture which is not frequently met with. The patient, a man, aged about 30 years, was thrown from a carriage and was found to have injured his elbow-joint. When I saw him the exact

Skiagram showing fractured head of radius.

nature of the injury could not be made out on account of the extensive swelling which occurred immediately after the injury. There were immobility of the joint and widening in the transverse diameter, and on movement of the joint crepitus could be elicited. Skiagrams revealed the exact nature of the injury—namely, fracture of the head of the radius with displacement of the upper fragment backwards and outwards. The joint after four weeks was rigidly fixed and movements were found to be impossible. The patient was anæsthetised and the joint was forcibly extended and flexed. Crepitus could still be elicited. An attempt was made to bring the fragments into exact apposition but this was found to be impossible. The arm was put up in a right-angled splint and kept quiet for a few days until the swelling had subsided, then early passive movements were commenced. These movements were continued twice daily for a fortnight and afterwards continued along with massage of the muscles. Later pronation and supination of the forearm were commenced and continued for several weeks. When I last saw the patient three months afterwards he had recovered a considerable amount of extension and flexion; he could pronate and supinate the forearm perfectly. The joint appeared to be normal and the fracture had united. The movements of flexion and extension were limited slightly. The patient had a useful arm and judging from the progress made in the short time he was under treatment I hoped he would ultimately recover the full use of the joint.

The case illustrates the difficulty of diagnosing injuries of the elbow-joint and shows the great value of the Roentgen rays in cases of injuries of joints where the nature of the lesion cannot be exactly determined.

Highgate, N.

A Mirror of HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, QUEEN-SQUARE, W.C.

A CASE OF SYPHILITIC INTRACRANIAL DISEASE.

(Under the care of Dr. THOMAS BUZZARD.)

FOR the notes of the case we are indebted to Dr. F. L. Golla, resident medical officer.

A man, aged 29 years, was sent by Dr. W. M. G. Glanville to the National Hospital for the Paralysed and Epileptic and admitted under the care of Dr. Buzzard on May 31st, 1905, complaining of loss of power in the left arm, headaches, and outbursts of laughter. He had served as a soldier in India and contracted syphilis four years ago; he was treated for three weeks by mercurial injections. He had a secondary rash but no other symptoms. Up to two months previously to admission he was feeling perfectly well but then developed right facial neuralgia which was ascribed to bad teeth. A tooth was extracted without any relief. A month later he began to suffer from severe headaches of frontal character. At the same time the neuralgic pains began to disappear. A week previously to admission he lost power in the left arm, which felt numb and useless. The loss of power was not complete. The acute loss of power lasted for two days and then began to improve. The sensation of numbness also gradually diminished. About five days previously to admission he became aware of facial palsy and suffered from uncontrollable outbursts of laughter and weeping. He had no vomiting or difficulty in swallowing. He noticed slight deafness of the left ear.

On admission the patient, a well-developed young man, looked extremely ill and was drowsy and apathetic. The pulse was full, with a tension of 160 millimetres of mercury, and very slow, averaging about 40 beats per minute. With regard to the cranial nerves, there was some degree of hyperæmia of the right optic disc but no definite swelling. The pupils reacted normally and all ocular movements were normally performed. There was no nystagmus or diplopia. There was slight nerve deafness of the left ear. There was definite weakness of the lower left facial muscles both to voluntary movements and in a lesser degree to emotional movements. He was liable to spasmodic attacks of laughter or weeping, during which all the facial muscles were uniformly affected; there was no corresponding involvement of the laryngeal muscles during these attacks, which were noiseless, but accompanied by lacrymation. All the other cranial nerves were normal. Smell was unimpaired. There was some definite weakness of the left arm, especially in the movements of the distal joints, and very slight relative weakness of the left leg was present. There was no objective sensory abnormality and stereognosis was unimpaired. The deep reflexes were much diminished on either side; the knee-jerks could only be obtained on reinforcement. The superficial reflexes were brisk and equal. The left plantar response was extensor and the right was flexor.

A tumour of the right temporo-sphenoidal lobe was diagnosed on admission. Three days after admission there was complete absence of all deep reflexes. Four days after admission the patient was considerably worse. He was very drowsy and vomited frequently. He could only be induced to take food with difficulty. He would only answer in monosyllables when addressed. He still had frequent attacks of laughter and weeping. The pulse was 38 and the blood pressure measured by the Riva-Rocci apparatus was 165 millimetres of mercury. Breathing was occasionally somewhat irregular and his condition was generally so alarming that Dr. Buzzard was telephoned for. The patient was ordered inunctions of one drachm of unguentum hydrargyri twice a day and 15 grains of potassium iodide every four hours and free purgation with calomel. Three days later the patient showed signs of commencing salivation and the mercury was discontinued. Four days after the commencement of mercurial treatment the patient showed considerable improvement. He was less drowsy, the pulse was about 60, and the blood pressure sank to 135 millimetres of mercury. A week after the onset of the anti-syphilitic treatment the spasmodic laughter had nearly disappeared and there was no trace of the left-sided weakness beyond a relative weakness of the grasp of the left hand when compared with the right. The hyperæmia of the right disc was, if anything, less pronounced. The deep reflexes still remained absent and the left plantar response extensor. The headaches and vomiting had completely vanished. The potassium iodide was now diminished to 30 grains three times a day. A month after admission the patient was discharged as cured. The only signs of his recent illness were the absence of the deep reflexes (the knee-jerks could be only obtained on reinforcement) and slight deafness of the left ear. Both plantar responses were flexor.

Remarks by Dr. BUZZARD.—The symptoms of intracranial tumour in this case were well marked and shortly after admission became so alarming (although the patient was under specific treatment) that the question of operative interference had to be seriously considered. But in view of the history of syphilis and the patient's age and the strong probability that the symptoms were due to the presence of gumma or gummatous meningitis of the right cerebral hemisphere it was resolved to persevere in the specific treatment and this was accordingly at once very actively pushed. The result was eminently satisfactory.

LEEDS GENERAL INFIRMARY.

A SERIES OF CASES OF TOOTH PLATE IMPACTED IN THE ŒSOPHAGUS; REMOVAL IN ONE CASE BY LATERAL ŒSOPHAGOTOMY.

(Under the care of Mr. H. LITTLEWOOD.)

FOR the notes of the cases we are indebted to Mr. H. Collinson, late resident surgical officer.

CASE 1.—This patient, the most interesting of the four, was a man, aged 35 years, who was admitted to the Leeds General Infirmary on March 23rd, 1902, with the following history. During the night of Feb. 14th he awoke suddenly and discovered that he had in his sleep swallowed a tooth plate containing three teeth of the upper jaw. At this time he experienced no great pain and stated that by putting his finger down his throat he could reach the plate. He went to a druggist in the early hours of the morning and an emetic was administered but the plate could

not be dislodged. Shortly afterwards the plate slipped farther down the gullet and began to cause him great pain; he then with difficulty walked to the local hospital suffering agony at every respiration. He remained in the hospital for some weeks and during this time several unsuccessful attempts at removal were made, both with and without anæsthesia. Early in March he commenced to suffer from severe cough with foul expectoration and his breath became extremely offensive. On March 23rd he was admitted to the infirmary complaining of slight difficulty in swallowing solid food and the expectoration of large quantities of fœtid pus. From these symptoms it was inferred that the tooth plate had ulcerated through the œsophageal wall and opened the left bronchus or one of the larger bronchial tubes and was lying partly in the œsophagus and partly in a bronchiectatic cavity. A skiagram demonstrated the presence of the foreign body at the level of the fifth dorsal spine.

On April 3rd—i.e., seven weeks after the accident—Mr. Littlewood operated under ether anæsthesia. An incision was made along the anterior border of the left sterno-mastoid commencing at the clavicle, the edge of the muscle was demonstrated, and the omohyoid, sterno-hyoid, and sterno-thyroid muscles were divided. The left lobe of the thyroid gland, which was found to be enlarged and cystic, was removed and the œsophagus was exposed; this was then opened by an incision one and a half inches in length and the edges of the wound were held apart by small volsella. A coin-catcher was passed and after some difficulty the edge of the tooth plate was located apparently projecting into the left side of the œsophagus. After repeated attempts with a pair of long œsophageal forceps the edge was at last caught and the plate was dragged out. It was covered with exceedingly foul pus and had evidently lain imbedded in the wall of the œsophagus and an abscess cavity communicating with the left bronchus. The œsophageal incision was closed by a continuous catgut stitch and the external wound was partially sutured and drained; there was some subsequent suppuration about the wound but it was quite healed in a month. The present condition of the patient is, on the whole, satisfactory; he still expectorates a quantity of purulent sputum which, however, is not offensive, and examination of the chest reveals occasional râles at the left apex but the signs are insignificant.

The next three cases bear a striking resemblance to the foregoing so far as their history is concerned; all swallowed the tooth plate whilst asleep; in one the plate carried four and in the other two cases three upper teeth.

CASE 2.—A man was admitted to the Leeds General Infirmary on June 16th, 1903, having swallowed his tooth plate the previous night. He presented no symptoms. A skiagram demonstrated the plate at the level of the fourth dorsal spine. Under ether it was removed with the coin-catcher after one or two attempts. The patient left the hospital on the next day.

CASE 3.—This patient was admitted to the Leeds General Infirmary on June 3rd, 1904, with an identical history. After a skiagram had been taken showing the plate at the level of the second dorsal vertebra the foreign body was removed without difficulty with the coin-catcher.

CASE 4.—A man was admitted to the Leeds General Infirmary on August 6th, 1904, stating that he had swallowed a tooth plate ten weeks before. He had spent three weeks in the local hospital, where unsuccessful attempts had been made at removal. No successful skiagram had been taken. On admission he complained of pain at the level of the cricoid cartilage and difficulty in swallowing with occasional vomiting. A skiagram showed the foreign body at the level of the fourth dorsal vertebra. On August 8th it was removed with the coin-catcher at the third attempt. The patient left the hospital on the next day.

Remarks by Mr. COLLINSON.—The impaction of a foreign body in the œsophagus is by no means an uncommon accident in children and in the greater number of cases the impacted body is a coin—usually a halfpenny. Its removal by means of a coin-catcher even at a considerable interval of time after the accident is usually a comparatively easy matter and it is rarely that an anæsthetic is necessary. In adults accidents of this nature are less common and the impacted body is usually larger—most frequently a tooth plate—and its removal is a more formidable undertaking. The above series of cases occurred within a comparatively short space of time and were all admitted to the General Infirmary at Leeds under the care of Mr. Littlewood, by whose courtesy I am permitted to record them.

As regards Case 4, an impaction of ten weeks' duration had apparently led to little, if any, damage to the œsophageal walls and the removal proved to be comparatively simple, but when one compares Case 1, in which the impaction was of shorter duration, one realises the dangers which are liable to accrue from the presence of a large and irregularly shaped foreign body in the œsophagus. A cross-section of the thorax at the level of the fifth dorsal vertebra shows that the relation of the œsophagus to the descending aorta is almost as close as its relation to the left bronchus and although the arterial walls are doubtless more resistant than those of the bronchus, cases have not infrequently been reported in which foreign bodies have produced a fatal result from ulceration of the former. The removal of a foreign body the impaction of which is of long duration is therefore an anxious operation to all concerned and one in which the greatest care is essential. The cases recorded illustrate the danger of sleeping with small tooth plates in the mouth, particularly if they do not fit well, and also the great value of the x rays in their localisation when accidentally swallowed.

On reference to the literature it is found that Eitel reports a case of lateral œsophagotomy for the removal of a tooth plate six years and four months after the accident, and Maylard reports a case for Lennox Browne in which a tooth plate was successfully removed with the coin-catcher after the lapse of three and a half years, but there are evidently only a few cases in which a tooth plate which has produced the grave lesion that occurred in Case 1 has been successfully removed by lateral œsophagotomy.

Medical Societies.

BRITISH ELECTRO-THERAPEUTIC SOCIETY.—A provincial meeting of this society was held at Leicester on July 26th, Dr. Donald Baynes, the President, being in the chair.—Dr. H. Lewis Jones opened a discussion on the Present Position of the Treatment of Carcinoma and Sarcoma by Electrical Methods, illustrating his remarks with two cases which he brought from London.—Mr. T. J. Bokenham then gave an address on the Treatment of Stricture of the Urethra by Electrolysis, showing some new forms of instruments for this purpose.—The meeting then adjourned to July 27th, when Mr. J. Hall-Edwards read a paper on X Ray Dermatitis, showing various protective devices, including a new and improved tube shield designed by Dr. Belob of Paris.—Dr. E. R. Morton, the secretary, on behalf of Mr. J. Allan of Chislehurst, showed a Tooth-brush extracted by Mr. Allan from the stomach of a patient 50 hours after it had been swallowed during a fit of temporary insanity with a view to suicide. The action of the gastric juice on the bony parts of the brush was most remarkable. The radiograph which accompanied the specimen showed its position in the stomach very satisfactorily.—Dr. G. H. Graham read a paper on Æsculin in Conjunction with Finsen Light in the Treatment of Lupus Vulgaris.—Dr. A. Stanley Green read a paper on the Diagnosis of Early Tuberculosis of the Lung by X Ray Examination of the Chest, which was illustrated by a very interesting series of lantern slides prepared from patients whom he had had under his care.—The meeting then adjourned until July 28th, when Mr. A. D. Reid described and showed a new combined X Ray and High Frequency Couch which was very complete and compact and free from complication. It was favourably criticised by those present.—Dr. Lewis Jones read a further note on the Use of the Milliampèremeter as a Measure of X Ray Production, illustrated by a series of lantern slides.—Dr. H. McClure opened a discussion on the Influence of Electrical Treatment on Blood Pressure and Body Temperature in which several of those present took part.—The President then read a paper on Neurasthenia.

EXETER BOROUGH ASYLUM.—The eighteenth annual report of the Exeter Asylum committee, which has just been issued, states that the number of patients in the institution on Dec. 31st, 1904, was 316, of whom 126 were males and 190 were females.

Reviews and Notices of Books.

Manual of Psychiatry. By J. ROGUES DE FURSAC, M.D. Translated by A. J. ROSANOFF, M.D. Edited by JOSEPH COLLINS, M.D. London: Chapman and Hall, Limited. 1905. Pp. 352. Price 10*s.* 6*d.* net.

THIS manual by Dr. de Fursac, formerly chief of clinique at the Medical Faculty of Paris, consists of two parts, the first dealing with general psychiatry, under the headings of etiology, symptomatology, methods of examination, and general therapeutics; and the second with special psychiatry which embraces the various forms of mental disorder.

Passing from the chapter on etiology, which does not call for remark, we find symptomatology treated fully, considering the size of the work, three chapters enumerating, explaining, and illustrating the perversions of normal psychical processes which constitute mental disorder. The tendency to classify is sometimes carried rather far; thus in discussing disorders of memory amnesia is divided into three classes—amnesia of fixation, of conservation, and of reproduction, according as the three distinct operations comprised in an act of memory are affected. Delusions are duly discussed under disorders of judgment but we find no adequate definition of an insane delusion. Discussing the vaso-motor phenomena of depression and exaltation the author does well to point out what is liable to be overlooked, that the effects of peripheral vaso-constriction and vaso-dilatation upon the blood pressure are modified by the strength of the cardiac impulse. In states of depression, for instance, with peripheral vaso-constriction it does not follow that the vascular tension is increased; on the contrary, if the heart participates, as it often does, in the general atony the tension falls despite vaso-constriction. Discussing the delusions of melancholia the view is put forward that "moral pain provokes delusions because it acts as a stimulus, struggling against the lassitude and finally conquering it." Assuming the translation to convey the author's meaning we confess that this is not clear to us. Moreover, the expression "moral pain" is new to us and, we think, a questionable one. Treating of the examination of patients the author states that the idea of simulating a mental affection can arise only in an individual psychically abnormal. This is a very original view. If it is correct, are we justified in meting out punishment to the malingerer? That unhappy individual has usually been allowed a short shrift when detected. This new doctrine has in it the elements of a pretty medico-legal dispute. The general therapeutical indications are good. We doubt, however, whether it is correct to say that the cold douche acts chiefly by its asphyxiating effect. This method may have been "abolished" in France but it is still used in this country. The author objects to the "old-fashioned covered bath-tubs intended to imprison the patient," yet he speaks of the good results which have followed the permanent warm bath, maintained for weeks, and does not mention any equivalent for a cover in such cases.

The scheme of classification of the insanities appears a good one; it includes the "psychoses of auto-intoxication," to which we have no objection, but it is premature to include amongst these dementia præcox and general paralysis on entirely hypothetical grounds. Acute delirium is a "psychosis of exhaustion." Why not of auto-intoxication? All this is mere guesswork. The chapters on the various psychoses are good. Dementia præcox is made as clear as that obscure condition can be until we come to the so-called delusional form when we are plunged into the customary vortex of divisions, subdivisions, and transitional forms. Emerging therefrom in the usual dazed condition we find relief in a logical exposition of Magnan's chronic delirium (paranoia) which he who runs may read and understand. Under general paralysis the pioneer work of "Harlan" of Bethlem is accorded due praise; no doubt Haslam is referred to. Reasons are assigned for separating the tabetic form of this disease from true tabes dorsalis. The whole chapter is excellent; the relationship of syphilis to general paralysis is well summarised. We miss, however, the differential diagnosis of the latter disease. Under mental disorders due to organic cerebral affections we find the view that the psychical symptoms in cases of cerebral tumour may be due to the action of toxic products secreted by the neoplasm and in support of this arguments are adduced. Under psychoses of involution "affective" melancholia is described. We were under the impression that melancholia was of necessity a condition of the affections or emotions. The author finds that rest in bed in acute mania performs miracles. Several types of mania—depressive insanity—are delineated on the basis of Kræpelin's work. In a chapter on constitutional psychopaths the physical signs of degeneration are dealt with and these are, we think properly, included as points to be noted in the scheme of examination of patients given in the appendix. Under epilepsy the author states the conditions under which alone the epileptic should be considered "absolutely irresponsible;" we miss amongst these the state of automatism. Throughout the book are numerous references to recent writings on the subjects dealt with.

In Dr. de Fursac's manual the student will find a great deal of information in a small space. The essentials of psychological medicine are presented in precise language and in a clear and orderly manner. We know of no better book of its size. The second French edition appeared at about the time when this translation was ready for the press.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. New Series, No. 13. Oriental or Delhi Sore. By Captain S. P. JAMES, I.M.S., M.B. Lond. Calcutta: Office of the Superintendent of Government Printing, India. 1905. Pp. 16. Price As. 10, or 1*s.*

THIS volume of the above series of memoirs contains an account of the work of the author on the etiology of oriental sore, for the investigation of which he was placed on special duty in April, 1904. Captain James examined undoubted specimens of the sore from Quetta, Shahabad, and Dera Ismail Khan, and others diagnosed as belonging to the same disease. He finds first of all that the appearances of the sore are by no means so characteristic as might be expected from the descriptions given in books. Next the appearances are described that were presented in films and sections obtained from the tissues of some of the sores. The films were made by smearing upon glass slides the granulations freshly scraped from the surface of a sore. These were stained with Romanowsky's double stain, with Leishman's modification of the same, or with an alcoholic hæmatin stain. From his investigation Captain James arrives at the following conclusions. The essential condition is the deposit of a tumour-like formation of granulation tissue which infiltrates, destroys, and replaces all the structures of the true skin and produces an ulcer by causing the epidermis to atrophy from pressure. Many of the cells of the new tissue contain a parasite which almost certainly is the primary cause of the affection. This parasite, moreover, cannot be distinguished microscopically from those obtained from the spleen and other organs in splenomegaly and kala-azar. These organisms, however, in the Punjab produce only the comparatively mild local disease known as Delhi sore, whilst those in Assam cause the dangerous general disease known as kala-azar, so that the observer is led to inquire whether the respective parasites are

different species of the same class. The probable modes of infection are by the accidental inoculation of material containing the parasites or possibly through a biting insect. Again, the evidence adduced points to the fact that even when numerous parasites are found in a Delhi sore no general disease such as kala-azar results, hence it is not likely that the infection occurs by the skin in kala-azar; also if any biting insect were proved to be the infecting medium of the sores it would not follow that kala-azar could be contracted in this way. Lastly, as the parasites were found in oriental sores contracted in Delhi, Kurnaul, Shahabad, Lahore, Quetta, and Dera Ismail Khan we may conclude that the sores known as "Delhi," "Lahore," "Sind," and "frontier" sores are one and the same disease caused by the same parasite. The ulcers known as "Naga sores" are apparently of a different nature.

The author has not found any confirmation of the opinion that true Delhi sores occur in dogs and other animals. He failed to communicate the affection to the former. Lastly, he investigated the question of the parasite acting as a cause of enlargement of the spleen. There is a close resemblance between the parasites of Delhi sore and those found in certain cases of enlargement of the spleen. Captain James concludes with regard to this that it is not justifiable to hold all the cases diagnosed as "malarial cachexia with enlargement of the spleen" as being due to the parasite recently discovered in the spleen and other organs, but that a diagnosis of "malarial cachexia" would in all probability in the present state of our knowledge be correct. The work is illustrated by an excellent plate of the micro-organism and altogether reflects great credit on the author.

Mammalian Anatomy, with Special Reference to the Cat. By ALVIN DAVISON, Ph.D. London: Rebman, Limited. 1903. Pp. 250, with 108 figures in the text. Price 7*s.* net.

THIS small treatise is not at all modeled upon the two best-known works dealing with the cat and its anatomy. The classical handbook of Strauss Durckheim is mainly admirable nowadays on account of its fine engravings of the osseous and muscular systems, while Dr. Mivart's, "The Cat," is anything and everything about the cat, psychological as well as anatomical and physiological. The author of the modest introductory work before us contents himself with a general survey of feline structure in as few words as possible and with as many illustrations as are needed to save verbiage. Accompanied by this text-book it will be easy to ascertain for oneself by dissection the principal features in the anatomy of a cat, or, indeed, of most mammals. Histology, where absolutely necessary—as, for instance, in the case of ovary and ova—is not neglected and it is remarkable into how small a space Dr. Davison has been able to compress most of the essentials. We are obliged to say "most" of the essentials, since there is no disquisition upon the cœlom. This word, "body cavity," and "diaphragm" do not occur in the index, though there is some account of the mesenteries which suspend the viscera and the diaphragm is figured. The cœlom ought to have had a section to itself, duly set forth in the table of contents, inasmuch as the modification of that organ is one of the most typical features of mammalian anatomy as compared with that of lower vertebrates. In no vertebrate that is not a mammal and in all mammals without exception is the cœlom divided into two chambers—a thoracic and an abdominal—by a muscular partition lying behind the lungs but in front of the liver. Otherwise, there is hardly an anatomical question raised by the actual facts that is not referred to. The rigorous saving of space has, however, compelled the author to deal with many topics in what the Germans call a "step-motherly" fashion. The functions of such organs as the thyroid are merely hinted at and such histology as is considered necessary to the book is summarily dealt with. The numerous figures add greatly to the usefulness of the book, especially those that are anatomical; the histological drawings are largely from micro-photographs and for the most part do not strike us as being thoroughly satisfactory. A section, for example, of intestine on p. 131 is more like a drawing of the horn of a rhinoceros than anything else in nature.

LIBRARY TABLE.

Die Chirurgischen Eingriffe bei Störungen des Bewegungs Apparates der Augen. (*The Surgical Treatment of Muscular Defects of the Eyes.*) By Dr. E. LANDOLT of Paris.—In this pamphlet Dr. Landolt recognises two modes of operative procedure for the cure of strabismus—tenotomy and advancement; tenotomy being the division of the tendon of the muscle which appears to be acting too strongly and advancement being the bringing forward, either with or without division, of the muscle which appears to be inefficient, and by this means affording it a better purchase to effect the rotation of the eye. Both proceedings, tenotomy and advancement, may be practised simultaneously or successively. In each case the excursion of the eye, the capability of convergence, and the power of single vision with the two eyes must be tested before and after the operation. Dr. Landolt describes the different modes of performing tenotomy and dwells upon the ill consequences that are so often observed even when this operation has been cleverly done. He points out the many advantages that result from advancement, though he acknowledges that it requires much more care and skill than simple tenotomy. He gives full details of the plan which he has himself, after much consideration, adopted and supplies a drawing that elucidates the somewhat complicated proceedings. In regard to the etiology of squint, he regards strabismus convergens as due to spasm of convergence—that is, of one or both of the internal recti—brought about by hypermetropia, as Donders maintained. It is active in its nature. Strabismus concomitans divergens, on the other hand, is due to relaxation of convergence and is a passive condition. An appendix contains a simple mode of enucleation, the chief feature being the employment of a pair of scissors curved both on the flat and on the edge. There is a very complete bibliography of the operations that have been proposed or adopted for squint.

Indigestion Clearly Explained, Treated and Dieted, with special remarks on Corpulency, Gout, and Constipation. By THOMAS DUTTON, M.D. Durh. Sixth edition, enlarged and revised. London: Henry Kimpton. 1905. Pp. 212. Price 1*s.* 6*d.* net.—The sixth edition of this work is published at a reduced price. The author says that he is totally averse to the members of the medical profession advertising themselves in any way but is in favour of the profession educating the public up to the times by means of medical works—such works as the general public can be trusted safely with, which will lead them away from the path of quackery.

The Seaside and Inland A B C Holiday Guide to all Health and Pleasure Resorts and Places of Interest in the United Kingdom. Illustrated with photo views. London: Wentworth Publishing Company. 1905. Pp. 331. Price 1*s.* net.—The aim of these pages is to give in a concise manner accurate and plain descriptions of all recognised resorts and places of interest in England, Scotland, Ireland, and Wales, with such particulars as to situation, access, population, and distance as may be useful to the prospective visitor and which may enable him to form an idea as to what each place

is like. The younger generations will here see places described which cater for their amusement and entertainment; the older folk, the feeble and the afflicted, may read of quiet places of retreat where they may find renewed life and vigour. A list of the golf links throughout the kingdom is to be found at the end of the work, together with lists of all the principal angling stations, of the mountain districts, and of the coaching centres. This little guide appears to us to be all that the publishers claim for it; wherever we have dipped into its pages we have found the information accurate and the descriptions just and fair.

How to Become a Nurse: The Nursing Profession, How and Where to Train. Edited by Sir HENRY BURDETT, K.C.B. New and revised edition. London: The Scientific Press, Limited. 1905. Pp. 360. Price 2*s.* net.—This is the seventh edition of this book from which full particulars can be obtained concerning the nurse training schools in this country, the colonies, and the United States of America. The contents of the book are official in that they are revised each year by the representatives of each institution. The text has been somewhat added to in this new edition. The work certainly fulfils the two chief purposes for which it was designed. In the first place it meets the case of every woman who is attracted to nursing and desires to become a fully trained nurse, and in the second place it has proved of material assistance to matrons and hospital officials in lessening the amount of correspondence by inquirers who seek the information which it contains. The particulars in the volume are arranged on a uniform plan which makes reference easy. The book begins with a useful summary of some of the requirements of the training schools and this will simplify matters for those who are thinking of taking up nursing as a calling. The aim of the editor is to give such an account of the requirements which may have to be fulfilled that each reader before taking up the work of nursing may have some knowledge of what qualifications and so on are essential and what the duties will generally be. A useful and very clear outline of the principal laws affecting nurses is contained in a chapter of 13 pages. The final pages are devoted to a consideration of the provident funds and associations for the benefit of nurses.

Garden Cities in Theory and Practice. By A. R. SENNETT, Member of the Institute of Civil Engineers. London: Bemrose and Sons, Limited. 1905. 2 vols. Pp. 1404. Price 21*s.* net.—This work is an amplification of a paper on the Potentialities of Applied Science in a Garden City which was read before Section F of the British Association for the Advancement of Science. Mr. Sennett, who is well known in the different sections of the engineering world as the author of kindred works and as the honorary librarian of the Automobile Club, is as well qualified as one man can be to write on the great number of questions of which these thick volumes treat. In his introduction he ventures the opinion that in his "Garden Cities of To-morrow" Mr. Ebenezer Howard has produced a book which, aided by the support of public opinion, may promote a great and beneficent change and open up a new vista in social, industrial, and national welfare. Mr. Sennett writes: "I do not know that any apology is due from me for a work upon the same subject, seeing that it is put forward in reinforcement of that to which I refer, except it be for its length, which has arisen from anxiety on my part to bring forward matters for consideration during the inception of the proposed cities." In turning over the pages of these beautifully illustrated volumes we are transported to the realms of the author's Utopia, and while we write "of the author's Utopia" we are conscious that it is one which is, in part at least, capable of realisation if those responsible will only remember the words of Lord Chesterfield that "those who aim vigorously at perfection will come nearer to it than those whose laziness or despondency makes them to give up its pursuit from the feeling of its being unattainable." Mr. Sennett says that in these pages he has ventured to assert that the day for the useful discussion of the industrial economics of a nation is passed and become next to valueless. For no scheme, thesis, or principle can be of utility or practically workable which is not founded upon a basis formed from the data derived from subsisting international conditions. "If we are to retrieve our supremacy, or, indeed, to re-establish ourselves upon a firm commercial basis, are to build new and improved cities in which capital can be invested and safely and profitably worked, we must learn to think both imperially and internationally. We must, moreover, be prepared to conform to such changes—be they industrial, social, commercial, or fiscal—as time has wrought; changes to which others, less self-satisfied but of greater prescience, have already found it beneficial to conform." Mr. Sennett's suggestions are strenuous and exhilarating; they must help to solve a gigantic problem, to neutralise the evil effects of overgrown populations, and thereby to increase the social happiness of the masses in this country.

JOURNALS AND MAGAZINES.

The Journal of Physiology. Edited by Sir MICHAEL FOSTER, K.C.B., F.R.S., and J. N. LANGLEY, Sc.D., F.R.S. Vol. XXXII., Nos. 5 and 6. July 13th, 1905. London: C. F. Clay. Price 11*s.*—The contents of these numbers are as follows:—1. On the Chemical Specificity of Precipitins, by Andrew Hunter, M.B., chemical research scholar. Precipitins are antibodies and were first discovered by Bordet in 1897. He treated rabbits with repeated injections of cow's milk and found that in time the serum of the animal treated gained the property of precipitating milk even in extreme dilution. Similar precipitins were subsequently obtained by injections of blood sera, white of egg, hæmoglobin, and many other proteids. Wassermann demonstrated the specific nature of this reaction. The serum obtained by injection of, say, ox serum would precipitate the serum of an ox but within limitations no other serum, not the serum of the horse or of the dog or of the guinea-pig. Later researches have shown that there is some, though not a powerful, action on the serum of nearly related animals. Dr. Hunter shows that the albumin, euglobulin and pseudo-globulin of ox serum are each capable of leading to the formation of precipitins which are in a limited degree specific. The precipitins thus obtained are mixtures of at least four distinct antibodies, of which albumin yields one only, while euglobulin and pseudo-globulin each yield three. The production of precipitins follows a wave-like course and is concurrent with an intermittent leucocytosis, the number of leucocytes at any moment bearing an inverse relation to the amount of precipitin. 2. Observations on the Gaseous Metabolism of the Small Intestine of the Rabbit, by A. E. Boycott, M.D. Oxon. In these experiments it was found that oxygen disappears from the intestine partly by diffusion but mainly by being changed or absorbed by the mucous membrane. It is normally present in the intestine of the rabbit. The intestinal wall is very permeable by carbon dioxide. Nitrogen injected into the intestine undergoes little change in five hours. There are certain combustible intestinal gases which are complex and of unknown proportions. 3. Of the Efferent Relationship of the Optic Thalamus and Deiter's Nucleus to the Spinal Cord, with special reference to the Cerebellar Influx of Hughlings Jackson and the Genesis of the Decerebrate Rigidity of Ord and Sherrington, by F. H. Thiele, M.D. Lond., pathologist to University College Hospital. Dr. Thiele's experiments show amongst other points

that the optic thalamus contains in its posterior part on each side a centre which controls the coördinated movements of walking; that the optic thalamus exerts an inhibitory control over the opposite cortical cells; and that the cerebellar cortical cells appear to exert an inhibitory action over Deiter's nucleus of both sides but especially of their own side. 4. The Changes in the Viscosity of the Blood during Narcosis, by R. Burton-Opitz, from the Physiological Laboratory of Columbia University at the College of Physicians and Surgeons, New York. The viscosity varies with ether and chloroform narcosis and is not in constant relation with specific gravity. The mean viscosity of the blood of the dog is 5·5 times as great as that of distilled water. 5. On the Antitryptic Action of Serum Albumin, by S. G. Hedin, from the Lister Institute. 6. The Ciliioscribe, an Instrument for Recording the Activity of Cilia, by W. E. Dixon, M.D. Lond., and O. Inchley, M.D. Cantab., with four figures in the text. 7. The Action of Adrenalin, by T. R. Elliott, M.A., George Henry Lewes student in physiology, with 12 figures in the text. This is a long and important article. Mr. Elliott observes that a positive reaction to adrenalin is a trustworthy proof of the existence and nature of sympathetic nerves in any organ. The stimulating effect takes place at the junction of muscle and nerve. The irritable substance at the myoneural junction depends for continuance of life on the nucleoplasm of the muscle cell, not on that of the nerve cell. 8. Observations on the Action of Trypsin, by S. G. Hedin, with two figures in the text. 9. The Normal Alveolar Carbonic Acid Pressure in Man, by Mabel Purefoy Fitzgerald and J. S. Haldane, F.R.S. It was found to have a mean value of 5·16 per cent. of one atmosphere in men, 4·78 in women, 4·89 in boys, and 4·63 in girls. 10. The Human Cardio-pneumatic Movements, by D. Fraser Harris, with five figures in the text. 11. The Action of Optical Isomers: (2) Hyoscines, by Arthur R. Cushing, M.D., and A. Roy Peebles, with two figures in the text. The Proceedings of the Physiological Society for May 20th and June 17th are included in these numbers, with the title page and the table of contents of the thirty-second volume of the journal.

Scottish Medical and Surgical Journal.—In the July number of this periodical are two papers of neurological interest—one by Dr. Edwin Bramwell upon a case of alexia in which at the necropsy there was found a lesion corresponding with the distribution of the posterior cerebral artery; and the second by Dr. J. V. Paterson on some cases of word blindness. An inaugural lecture by Dr. A. H. F. Barbour on the History of Obstetrical Anatomy calls merited attention to the work of some early writers in this field. Dr. G. R. Wilson deals with the occurrence of pain and with the peculiar symptom of sudden attacks of fear in connexion with cardiac disease, with a view to persuade general physicians to recognise the fact that mental symptoms are not things beyond ordinary medical ken but are closely allied to other nervous phenomena. Mr. J. Hogarth Pringle records a case of reversal of the patella—a twisting of the bone by external violence so that its posterior surface looks anteriorly—a rare form of injury.

Birmingham Medical Review.—In the number for June the second Ingleby lecture on Mentally Defective Children maintains the high level of interest reached by the first. We cannot, however, help regretting that a little more care was not exercised by the author over the wording of the lecture when it came into print, as the English here and there leaves a good deal to be desired: the matter is admirable. Mr. Charles A. Leedham-Green discusses the important question of marriage after the occurrence of gonorrhœa and shows that there is a difference of opinion as to what constitutes proof of a satisfactory cure. Dr. W. Murrell records two cases of ulcerative colitis and advocates the use of solutions of argyrol—a silver preparation—in the treatment of this condition.

Looking Back.

FROM

THE LANCET, *SATURDAY*, August 11, 1827.

The Hospital OUT-PATIENT system, and the *Public Infirmary* and *Dispensary* systems, are reducing those GENERAL PRACTITIONERS, who happen to come within their influence, to distress and beggary. Yet there is no Act of Parliament, no Surgical Charter to remove, or even check, this growing evil. The little influence our College does possess, is used to augment it, by holding up hospital surgeons as men of a superior grade, thereby bestowing honour on those individuals through whom the great majority of the profession are so much injured, both in reputation and in purse. It surely was never intended by the FOUNDERS of hospitals, that persons in affluent circumstances should become the objects of their generous bounty; that respectable TRADESMEN should attend as OUT-PATIENTS, and be supplied with medicines and advice GRATUITOUSLY; yet such is the practice to an almost incredible extent, thus depriving private practitioners of that emolument to which they are justly entitled. It appears, that in the statement published by some of the Governors of the London Hospital, who did not relish the late job, that the number of OUT-PATIENTS at GUY'S was underrated, and the following correction (evidently official) was forwarded to *The Times* immediately after the error appeared:—

"Under the head of London Hospital, in *The Times* of Tuesday, the 3rd inst., an incorrect (doubtless unintentional) statement respecting Guy's Hospital having been made, the following correction of such statement is now sent for insertion:—It is there said, that at Guy's Hospital the in and out-patients were, in 1826, about 20,000; physicians, 3; assistants ditto, 1; surgeons, 4; apothecary, 1; total, 9; house pupils, 3; grand total, 12. Now, of out-patients alone, nearly 9000 received relief in the last four months of 1826, and during the last past six months of this year, 1827, upwards of 15,000 (15,268) have been already relieved. The out-patients, though generally only once, are often seen frequently, in the week. There is, indeed, only one regular admission day for them; but all cases that require it are continually attended to, whenever they present themselves. It may also be mentioned, that the regular number of beds in the Hospital exceeds 400. Of such an establishment, formed by the endowment of one man, its governors and officers, and even the country in which Thomas Guy was born, may surely justly be proud."*

So that FIFTEEN THOUSAND TWO HUNDRED AND SIXTY-EIGHT out-patients have been already relieved at GUY'S, during the last past six months of the present year. Here is a pretty system. RELIEVED, be it remembered; how many there have been maimed and killed, Mr. HOSPITAL PUFF does not tell us. Now, when we reflect that medical practitioners are never backward in tendering either advice or medicine *gratuitously* to a truly distressed object, when we likewise reflect that the poor laws have secured medical attendance to the PAUPER, there is something in the above puff that excites our warmest indignation. THOMAS GUY, we take it, did not intend to be one of the destroyers of the medical profession, to found a shop for quacks, or to give medicines to such as do not require or deserve them.[1]

The *Times* of August 10th, 1905, has the following interesting excerpt from its issue of Saturday, August 10th, 1805:—

"It is a lamentable fact that the Small Pox is extending its ravages, not only in the metropolis, but in many populous cities and towns of the kingdom, to a degree unexperienced for several years. It is believed, that at present about *fifty persons die weekly*, by this disease, in London and its environs. In one house there have been eleven deaths. The mortality at Norwich has also been considerable; in consequence of which, a meeting has been convened, at which the Mayor of that city presided; and it has been resolved that a General Inoculation for the *Cow Pox* shall immediately take place. Surely it is high time, that prompt and efficacious measures were taken, to stop the further ravages of that fatal disorder in the metropolis."

Curiously and appropriately, in the same number of the *Times* (August 10th, 1905) an announcement appears that a memorial tablet was on August 9th erected by the London County Council on No. 14, Hertford-street, Park-lane, where Edward Jenner resided in 1803.

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* *Times*, July 5, 1827.

[1] Excerpt from leading article.

THE BRITISH MEDICAL ASSOCIATION.

MEETING AT LEICESTER.

On July 26th the members of the Association were entertained in the evening at the museum buildings of Leicester by the Midland branch of the Association. The magnificent museum buildings, together with the art gallery adjoining, were thrown open for the occasion and the grounds were beautifully illuminated. Unfortunately heavy rain somewhat marred the enjoyment of those who wished to be in the gardens but the valuable collection of pictures and the very fine show of antiquities served as a solace for the disappointment. Naturally enough great attention was bestowed on the celebrated picture of "Orlando pursuing the Fata Morgana," presented to the town by the artist, Mr. G. F. Watts, R.A. The entertainment of the guests was further provided for by the clever artistes called "The Follies," and in a large upper room Mr. Harrison Hill, the well-known society entertainer, drew crowded audiences. Praise must be also given to the band of the Royal Artillery (Portsmouth).

The annual breakfast given by the National Temperance League to the members of the British Medical Association was held this year on July 27th in the Temperance Hall at Leicester, Dr. J. W. Leigh, the Dean of Hereford (the President of the league), being in the chair. The great feature of the meeting on this occasion was the presentation of an address of appreciation to the medical profession by the National Temperance League on behalf of the whole temperance movement in recognition of the important services which have been rendered to the cause of temperance by the medical profession through its progressive research and its declarations as to the nature and effects of alcohol. Speeches in support of this address were delivered by the Dean of Hereford, the President of the Association, Dr. C. K. Millard, Dr. Harry Campbell, and Dr. R. Jones. The proceedings terminated with a vote of thanks to the Dean of Hereford, which was proposed by Mr. W. McAdam Eccles and seconded by Mr. T. Laffan.

On July 27th Mr. R. C. Stewart, the President of the Leicester Medical Society, entertained the members of the Association and their friends at a garden party in the grounds of the County Asylum which is situated a little way out of Leicester on the London-road; and on the same day a garden party was given by Mr. Maurice Levy, M.P., and Mrs. Levy at Humberstone Hall, near Leicester. Special electric cars conveyed the guests to Humberstone and Mr. and Mrs. Levy received over 300 visitors, the ceremony of introduction taking place at the end of the famous avenue of cedars leading to the Hall. The performance by local amateurs of a clever comedy entitled *The Duchess of Bayswater & Co.* was quite worthy of the applause which it evoked and the Imperial Prize Band delighted a number of the visitors. Altogether this entertainment must be reckoned one of the successes of the meeting. In the evening the ladies committee, under the presidency of Mrs. G. Cooper Franklin, contributed to the gaiety of the meeting by providing a most enjoyable entertainment in the King's Hall at the Grand Hotel, Leicester. The hall was most tastefully decorated and Mrs. Franklin received many congratulations on the success of her efforts. An orchestra with glee singers and other vocalists discoursed music and the crowded apartments testified to the popularity of the fair hostesses.

On July 28th Mr. S. Faire, J.P., and Mrs. Faire opened their magnificent place at Glenfield Frith to the visitors and contributed to their enjoyment by holding a garden party for the occasion. The comfort of their guests was studied to the smallest detail: electric tramcars ran from the centre of the town to the Groby-road terminus where carriages were waiting to convey the guests to Glenfield Frith. Mr. and Mrs. Faire had secured the services of the band of the Royal Artillery and the playing of this band during the afternoon was much appreciated by the musical enthusiasts amongst the party. The splendid weather and the lovely grounds insured the success of the gathering, as every other detail had been carefully thought out. On the same day a party of visitors strictly limited to 60 visited Belvoir Castle, travelling in special saloon carriages to Stathern. Lunch was served in the train and on arriving at Stathern station private carriages were found waiting to convey the party through the beautiful woods of the district to Belvoir Castle which was reached shortly after 3 o'clock. Here the most complete arrangements had been made to insure that all the wonderful and interesting antiquities of the place should be seen. This magnificent pile of buildings stands high on a hill commanding lovely views over the vale of Belvoir and the celebrated gardens were in the perfection of their beauty and deserved the admiration of the visitors. Tea was served in the castle and the party shortly afterwards left for a pleasant drive to Redmile station whence the return journey was made to Leicester.

On the night of Friday, July 28th, Mr. and Mrs. Stephen Hilton, the Mayor and Mayoress of Leicester, gave an evening fête in the Abbey Park of the town. 40,000 fairy lamps of every shade of colour were placed on the lawns and in the beds of the park and in addition thousands of Chinese lanterns swung from the branches of the trees. The sight was extremely pretty and the waters of the lake reflecting the shimmering points of light rendered the scene a veritable fairyland. The guests numbered over 2000 and Mr. and Mrs. Hilton were unable for some time to move from the large marquee in which they received the visitors. The stream of guests, however, slackened sufficiently for the Mayor and Mayoress to be able later to move about the grounds and at half past ten a marvellous display of fireworks was witnessed, the last set-piece wishing "Good-night" and "Success to the Members of the British Medical Association."

The excursion to Buxton on July 29th proved a great success, the number of the party proceeding to this favourite watering place being about 120. Buxton was reached by special train a little after 11 A.M. and the first item on the programme for the day was found to be a visit to the baths and afterwards to the Devonshire Hospital. The arrangements were excellent, the medical men of the town, under Dr. C. W. Buckley, taking charge of small groups of visitors and personally explaining the equipment of the bathing establishment. The programme for the remainder of the day was of a most varied description and it is difficult to do justice to the organising capacity of the reception committee which seemed to have foreseen and to have provided for all the possible wants and pleasures of the numerous visitors. A lunch was served at the Palace Hotel to a great number of the party, Mr. H. A. Hubbersty, J.P., presiding, and being helped by Dr. Buckley in entertaining the guests. The toast of "The Guests" was proposed by Mr. W. Armstrong and responded to by Dr. T. D. Griffiths and by Dr. J. Brassey Brierley. The Bishop of Salisbury was also present and took part in the proceedings by saying grace. The remainder of the visitors lunched at St. Ann's Hotel where the hospitality was as open-handed as at the Palace Hotel. After lunch the visitors had a great many entertainments to choose from. Conveyances were in

attendance to take those who wished to play golf to the splendid links on the heights by the town. Those who wished to go to Castleton were taken to the Midland Railway and arrangements were made for a visit to Chatsworth and Haddon or to Matlock. Some desired to see the Goyt Valley and were promptly provided with carriages. Others chose shorter drives and visited the "Cat and Fiddle," enjoying the splendid upland scenery so characteristic of Buxton. Some elected to remain in Buxton and for these special tickets were procured for the Buxton Gardens where a first-class band was playing. Wherever the visitors went they found that the reception committee had provided for the refreshment of the inner man and tea was procurable at the different refreshment kiosks, at the Empire Hotel, on the terraces, in the gardens, and in the luxurious lounge adjoining. The Union Club dispensed hospitality to the visitors and Poole's Cavern was inspected by many. Some of the party desirous of revisiting the Devonshire Hospital spent a part of the afternoon under the guidance of the members of the medical staff in going over the different cases. The return journey to Leicester commenced at 7 o'clock and all were unanimous in praising the reception committee for what it had done.

On July 28th Professor William Stirling gave the "popular lecture" at Leicester on the subject of "Fatigue and Repose," and lantern slides of well-known pictures emphasising special points of the subject were projected on the screen and were much appreciated by the people of Leicester. For the purposes of this meeting Professor Stirling had printed some attractive antique paper covers with striking extracts from Cervantes, Shakespeare, Keats, Hood, Spenser, and others relating to sleep and rest, containing reproductions of nine pictures and prints—viz., a portrait of Andreas Vesalius; prints showing the superficial muscles of man from Vesalius's "Fabrica Humani Corporis" (Basel), 1543; portrait of the anatomist Nicolaus Stenonius; and prints of the following paintings: "Victory, O Lord!" by Sir John E. Millais, Bart.; "St. Catherine," by Sodoma; "Worn Out," by T. Faed; "Hard Times," by Hubert von Herkomer; "The Stonebreaker," by H. Wallis; and "The Anatomy Lesson," by Rembrandt. The lecturer stated that mental fatigue caused bodily fatigue and *vice versâ*, and emphasised that severe muscular work and great mental activity were incompatible—at least, for most persons the double tax was too heavy. Teachers in schools knew that the effects of excessive mental work could not be immediately compensated by prolonged sleep, the remedy consisting of diminished work and increased recreation. In addition to sleep naturally obtained, true repose for many a weary brain was to change to some unexciting but useful occupation. Professor Stirling also, when commenting on the continuous strain of standing, said that it was easier to walk and to keep moving than to stand.

A neat and interesting souvenir of the British Medical Association's meeting at Leicester was issued by Messrs. Barroughs, Wellcome and Co., entitled "Leicester Medical Lore and Lecture Memoranda, B.M.A. Meeting, 1905." It consisted of a pocket book with a green leather cover bearing the arms of Leicester and containing 35 pages relating the history of Leicester illustrated by pictures, especially from the medical point of view, a note relating to the British National Antarctic Expedition, 32 ruled pages for lecture memoranda, and a synopsis, formulary, and abridged price list of the products of the firm. The points especially dealt with in the historical account are the Roman occupation of Leicester; the ancient abbey of St. Mary de Pratis, or St. Mary of the Meadows, and the death therein of Cardinal Wolsey; the plagues in Leicester in 1342, 1361, 1564, 1593, 1603, 1610, and 1623, to which a note is added that Leicester escaped the dread disease that decimated London and other large towns in 1665 and has not since been visited by the plague; the hospitals in Leicester, the first of which is said to have been founded for lepers in 1169; Leicester folk medicine, dealing particularly with a curiously spelt list of "prices of oyles and other lickwids" by John Frisby between 1723 and 1774; and notes on Robert Burton, author of "The Anatomy of Melancholy," who was a Leicestershire man.

THE SECTIONS.

MEDICINE.

FRIDAY, JULY 28TH.

A discussion was opened by Dr. J. DRESCHFELD (Manchester) with an address on

The Diagnosis and Treatment of Cardiac Degeneration apart from Valvular Disease,

based upon the following headings: 1. Acute myocarditis, especially in connexion with typhoid fever, diphtheria, pneumonia, and influenza. 2. Chronic myocarditis. 3. Myocardial affections in connexion with chronic infectious diseases (syphilis, malaria, and tuberculosis). 4. Cardiac insufficiency due to chronic intoxication: (*a*) exogenous toxins (alcohol, tobacco, and lead); and (*b*) endogenous toxins (Bright's disease, diabetes, gout, Graves's disease, cancer, and cachexia). 5. Myomalacia due to arterio-sclerosis. 6. Heart muscle failure in chronic lung affections. 7. Heart strain due to excessive muscular exercise. 8. Fatty heart. 9. Senile heart.

Dr. W. P. HERRINGHAM (London) said that in speaking of cardiac degeneration it was impossible to give anatomical grounds for the condition while the case for physiology was still weaker. They were driven to clinical observation and no experiments could check observation. The largest class of sufferers included elderly people, those exhibiting arterio-sclerosis, hypertrophied heart, and morbus renum. Those who developed definite hypertrophy lived longer than those who did not. Under stimulation the peripheral resistance was increased by contraction of the smaller arteries, while the larger elastic ones yielded to internal pressure. Endarteritis was due to impurities in the blood, such as those present in syphilis, diabetes, and nephritis. In young people these might always be traced to kidney disease, while in elderly people they resulted from excessive feeding, the habits of youth and middle life in the matter of excessive eating and drinking being continued at a time when the muscles were working at half speed and half time. After acute fevers, especially typhoid, there was degeneration of the cardiac muscle as in diphtheria. Rheumatism caused dilatation of the heart due to myocarditis or degeneration of muscle which might result in acute cardiac failure. Acute myocarditis occurred in rheumatic fever and in syphilis, while in the latter there might also be failure from gumma or the succeeding cicatrix. Dr. Herringham quoted three cases in big muscular men with primary syphilis where there had been no rheumatism or definite cardiac lesion, and of these one died, the heart exhibiting no valvular or other definite change beyond hypertrophy and dilatation, the paresis apparently resulting from interstitial myocarditis. Alcohol and tobacco impaired the vigour of the heart muscle and the œdema associated with alcoholic subjects was familiar enough. In young adults, like soldiers, growth and development threw extra work on the heart which perhaps in some individuals did not grow adequately to meet the extra strain. Acute dilatation of the organ was frequently met with after over-exertion, such as climbing or cycling. So many anatomical and physiological conditions produced the same ultimate effect that exact diagnosis was practically impossible. Roughly speaking, hearts yielded from intrinsic muscular weakness or owing to external stress; sometimes both causes were at work. This classification, however, afforded a fair indication for treatment.

Dr. A. FOXWELL (Birmingham) speaking of chronic forms of myocarditis said that it was impossible to diagnose that due to syphilis from local manifestations either clinically or post mortem. It, however, seldom occurred alone, the endothelium being likewise affected and in association with valvular lesions, dilatation of the aorta, or arteritis of the

pulmonary vessels, the smaller branches being less affected. Where the heart was large with a feeble impulse and low arterial tension or with hard peripheral vessels a diagnosis of syphilitic myocarditis might be hazarded. Closely allied to these changes was the pulmonary atheroma in chronic lung disease, such as fibroid change, bronchiectasis, and emphysema, in which the vascular change was symmetrically and generally distributed and not restricted to the diseased side. There was right heart hypertrophy and often a great degree of pulmonary arterio-sclerosis was associated with a limited amount of lung disease. The sclerosis resulted from the raised blood pressure necessary to carry on the circulation at sufficient rate through the diminished circulation area, especially while the patient was leading an active life; this was associated with right heart hypertrophy, though this did not take place as readily as on the left side. In connexion with cases of heart strain Dr. Foxwell suggested that this was not solely the result of effort, there being in many cases evidence of previously existing disease shown by incomplete recovery and he cited one case in a middle-aged man who recovered partially after alarming symptoms. For six years the heart gave trouble on slight provocation and showed signs of dilatation and hypertrophy. With advancing life the organ came nearer its limits of repair and diminished activity of brain and muscle with reduced food were necessary to maintain life within its capacity. This patient was still living and in moderate health but with a loss of weight of one and a half stones to his advantage. In another case severe mental strain resulted in a syncopal attack lasting an hour. Seven years before the heart had been reported on as weak and two other members of the family had large weakly acting hearts. This was apparently a "heart family," the muscle being of weaker character and less resistance than normal. Another case was that of a patient, aged 60 years, whose heart failed in hurrying to catch a train, this occurring, no doubt, at the end of a long process of degeneration. He never recovered sufficiently to work again, being reduced to a lower rate of living consistent with the diminished heart power. The diagnosis of fatty heart was very difficult and was made too often. The organ was not necessarily enlarged and panting, sighing respiration with weak pulse were significant. The alcoholic heart exhibited imperfect muscle striation suggestive of the change in "cloudy swelling." The treatment of heart failure involved a most fascinating study, requiring the nice balancing of various functions and parts of the organism against each other, especially the vessels, kidneys, lungs, skin, and muscles. Over-stimulation of the heart in these circumstances shortened life, while if action fell below a certain degree life failed from pulmonary œdema. Lessening external work for the heart by diminishing life strain and relaxing vessels, &c., conserved its energy to overcome internal difficulty and so regulated the balance within the scope of its powers.

Dr. J. HAY (Liverpool) restricted his observations to the condition of the venous pulse in the neck. In health tracings showed a wave with the auricular contraction and another due to the impact of the carotid pulse; with myocardial degeneration, whether associated with valvular disease or not, the auricular contraction wave was absent and there resulted the ventricular form of pulse wave. Either the auricle was paralysed or it contracted with the ventricle as in experimental stimulation of "Gaskell's bridge," the rhythm being controlled by the auricular canal. As the heart tone was regained there resulted a fuller radial pulse preceded by the auricular wave in the jugular vein. When the inception of the heart impulse occurred at the auricular canal instead of the auricle the beat was inefficient.

Dr. S. WEST (London) spoke of cardiac failure in pyrexia and acute fevers, such as accompanied rheumatic hyperpyrexia and sunstroke or diphtheria and influenza. He referred to the observation of Stokes that the first sound was sometimes muffled in fevers and not necessarily in cases with the highest temperature. It was a serious warning of trouble and in one of his own cases of typhoid fever was followed by relapse and death. In rheumatic cases the young house physician was generally anxious to get the patient up as soon as the fever declined, the effect on the heart being often serious. Some cases of acute fever and severe illness as the cardiac form of influenza required care for a year before recovery was complete as regarded the heart and this was not surprising when the slow recovery from overstrain in an athlete was considered. In chlorosis with fatty change in the myocardium strain soon showed itself and dilatation involving considerable displacement of the apex came and went with exertion and rest and this was also the case in valvular disease. Failure of the heart in pericarditis was not surprising seeing that the pericardium was continuous with the interstitial cardiac tissue, so that both were necessarily involved together. When the heart failed the tissues to suffer first would be those the veins of which were nearest and these were those of the heart itself; so that a vicious circle was early established, described by Jenner as congestion of the heart. In treatment the susceptibility of the degenerated heart to digitalis was to be remembered. Small doses were sometimes useful but the cumulative action might be very speedily illustrated, the beats falling from 150 to 40. The drug should be given cautiously and suspended at once when such warning was given.

Sir JAMES GRANT (Canada) cited two cases of aortic stenosis in which life had been extraordinarily prolonged and he insisted upon the importance of careful attention to all the tissues and functions of the body in the treatment of cardiac disease.

Dr. W. EWART (London) pointed out that regular mechanical effort assisted the heart while mental strain embarrassed it. Most cases were treated effectually without powerful drugs, as Sir James Grant had indicated. The heart wanted time to feed and to rest and this small doses of digitalis might supply; otherwise careful regulation of diet, rest, and the normal bodily functions afforded the best means of cure.

The PRESIDENT of the section (Dr. F. M. POPE, Leicester) pointed out that heart failure occurred in the summer, seldom in the winter. Arrhythmia was due to failure of a thin auricle.

Dr. J. MACKENZIE DAVIDSON (London) gave an interesting demonstration of

The Use of the X Rays in Medical and Surgical Work,

with the aid of numerous lantern slides, with the object of showing the uses and limitations of the method. One point upon which he specially insisted was the importance of always taking the photographs stereoscopically. In 1898[1] a method of precise localisation was described and the stereoscopic method on Dec. 3rd, 1899. Small particles of metal or glass had been located in the eyeball or orbit to the one-fiftieth part of an inch. Calculi of various kinds and in divers positions were demonstrated by actual skiagrams of the patients. Other cases were aneurysm of the aorta, diverticulum of the œsophagus, probing of the frontal sinus from the nose, subdiaphragmatic abscess, shot in the orbit, half the portal vein injected, showing independence of the circulation in the two halves of the liver, and fracture of the head of the femur in reduction of congenital dislocation.

Dr. BERTRAND DAWSON (London) read a paper on

The Diagnosis of Gastric Ulcer,

in which the two well-defined types of ulcer were alone considered. Epigastric pain related to food. Localised tenderness, vomiting, and hæmatemesis were shown to be characteristic of other non-malignant affections of the stomach besides ulcer. Such were dyspepsia of anæmic young women (anæmic dyspepsia), gastritis caused by oral and pharyngeal sepsis (septic gastritis), and hæmorrhagic gastralgia. A large number of the milder cases classed as gastric ulcer were due to anæmic dyspepsia. This was shown by a comparative study of clinical and pathological statistics, by the effects of treatment, and from the fact that out of a series of 24 cases under 25 years of age operated on for marked symptoms of gastric ulcer, in five a careful search within the stomach failed to disclose the ulcer. Similar cases were quoted in which no focal lesions were found at the necropsies. Dr. Dawson regarded these cases in anæmic young women as liable to acute invasion by ulcer. He further showed how septic conditions of the teeth, mouth, and naso-pharynx produced a gastritis with the same symptom complex as gastric ulcer, and how when the cause was removed the gastric symptoms quickly recovered. The diagnosis between gastric ulcer and these other conditions resembling it was considered. Acuteness of onset, complete intermission between acute attacks, non-subsidence of symptoms after a few days in bed, and recurrence of symptoms, especially hæmatemesis while in bed, were points in favour of ulcer. Pain in ulcer was accentuated by food, except in some cases where the situation was at the pylorus, in which food

[1] Brit. Med. Jour., Jan. 1st, 1898.

alleviated it. The length of time that pain occurred after food did not, however, throw light on the locality of the ulcer. This was shown by the examination of 102 cases operated on at the London Hospital. Deep localised tenderness was more suggestive of ulcer when it continued after the subsidence of other symptoms than during the attack. It was not caused by pressure on the ulcer. Tenderness of the skin over the upper abdomen occurred in anæmic and neurasthenic dyspepsias as well as ulcer, but when the diagnosis of ulcer was established the tenderness of the skin was a guide to its severity and progress though not to its locality. Increase in the free hydrochloric acid of the stomach was a characteristic of most cases of ulcer. In the diagnosis between chronic gastric ulcer and early carcinoma attention should be paid to the motor function of the stomach and to the presence or absence of free hydrochloric, lactic, and butyric acids and pepsin. A microscopical examination of the fasting contents was also of value. Free nuclei of leucocytes and other cells and sarcinæ were usual with the presence of hydrochloric acid and Oppler-Boas bacilli in large numbers with the presence of lactic acid. Clumps of pus cells with blood cells pointed to ulceration. By combined microscopical and chemical observations a correct early diagnosis was rendered possible.

SURGERY.

FRIDAY, JULY 28TH.

Mr. J. JACKSON CLARKE (London) read a paper entitled

A Note on Congenital Dislocation of the Hip-joint and its Modern Treatment.

He considered that congenital dislocation of the hip-joint was now a curable affection and this advance in surgery was due to Lorenz who evolved the manipulative and gymnastic method of treatment. When the patient was of suitable age the operation was without serious risk. The greater part of the after-treatment could be carried out at home under the care of the family medical practitioner. The patient invariably improved in general health and strength during treatment. The profession in this country had not yet appreciated the scientific basis and technical details of the treatment. Two years must elapse before the final results could be considered. From the experience of 17 cases which Mr. Jackson Clarke had treated by Lorenz's manipulative method in the last two and a half years he considered that the open operation was no longer justifiable and that cases of double dislocation were as well suited to the method as unilateral dislocations. The results were illustrated by photographs which showed complete restoration to the normal form and function of the previously shortened limbs and deformed spines. Experience in the method enabled the surgeon to avoid dangers.

Mr. JORDAN LLOYD (Birmingham) considered the Lorenz method a reasonable operation. Courage was necessary in its performance, because the force to be exerted was great Lorenz had shown how far they could go with safety in these cases. He thought it a mistake to promise too much to the parents. The cases could be improved but even in the most successful cases the result was not perfect.

Mr. C. R. B. KEETLEY (London) thought that the prognosis depended chiefly on the age of the child. Before three years of age it was possible to promise a perfect result but even then the promise should not be absolute. He was inclined to think that many of these cases were not really congenital in origin but were traumatic. In certain cases it was possible by a stout silver wire passed through the neck and the anterior superior spine to keep the head in the acetabulum. The wire might be left in for four or five weeks.

Sir CHARLES B. BALL (Dublin) considered that the risks of the open operation were well worth running in order to obtain an exact knowledge of the conditions present.

Mr. JACKSON CLARKE, in reply, pointed out that Lorenz had renounced the open operation in favour of the manipulative method. Lorenz had been the first to point out the importance of the rôle of the muscles in maintaining the head of the femur in the acetabulum. Some of the defects after the operation were sometimes due to the existence of coxa vara. The after-treatment was of great importance. It might be said that in 90 per cent. of the cases under four years of age the prognosis was good.

Mr. KEETLEY read a paper on

Appendicostomy.

This operation, he said, consisted in bringing the appendix through the abdominal wall and opening it externally. The indications for the operations were muco-colitis, dysentery, obstinate chronic constipation, and syphilitic ulceration of the large intestine with hæmorrhage. The mode of performance of the operation might vary but it was important that the appendix should not be twisted. The presence of even many adhesions around the appendix was not a positive bar to the operation. He thought it important that the base of the appendix should be pulled close up to the parietal peritoneum. Unless the case was urgent the appendix should not be opened till the second or even the fourth day. The operation was painless and speedy and local anæsthesia of the abdominal wall was all that was needed. The first operation was performed by Robert F. Weir of New York. In all nine cases had been recorded and seven of these were successful and even the other two were none the worse for it; Mr. Keetley had performed the operation twice. The first patient was a girl, aged 15 years, who had had very severe constipation all her life. Her bowels rarely acted more frequently than once a week and on one occasion 24 days had elapsed without a motion. Now she had a daily motion by injecting some saline aperient through a catheter and she was much better in health and did not suffer from the severe headaches which she had before the operation. The second case was one of ileo-cæcal intussusception and Mr. Keetley employed the operation to anchor the cæcum.

Mr. PERCY FURNIVALL (London) had opened the cæcum in five cases for colitis, dysentery, and similar conditions. The colon was then washed out, beginning with a very mild solution of silver nitrate, say 1 in 400, about a pint being used. Three of the cases did well but in the other two no effect followed. He thought it an objection to appendicostomy that if the patient recovered the opening would not close.

Professor HOWARD A. KELLY (Baltimore) thought that in America at least there would be a great risk of the operation being overdone. It must be suitable for only a few cases. In his opinion many cases of colitis really affected only a part of the rectum and therefore might be treated by local applications.

Sir CHARLES BALL asked as to the amount of leakage and whether any dressing was required. He quite agreed with Mr. Keetley that it was desirable to anchor ileo-cæcal intussusceptions and he was in the habit of putting a stitch through the meso-appendix and fastening it to the posterior abdominal wall.

Mr. KEETLEY, in reply, said that there was no leakage at all in either of his cases and the opening itself was very small. He did not think that there was any need to close it and, indeed, it was convenient to have such an opening, as one never knew what might happen.

Mr. J. F. THOMSON WALKER (London) read a paper entitled

A Note on a Specimen of Bladder and Urethra removed Two Years after Prostatectomy.

The paper was illustrated by lantern slides. The patient from whom the specimen was taken had had suprapubic prostatectomy performed by the late Mr. Herbert W. Allingham at St. George's Hospital. 15 months before the patient died he had hæmaturia and death resulted from a malignant growth of the bladder. This growth, however, was quite separate from the prostatic cavity which still formed a well-marked space, lined by an irregular epithelium, and outside the epithelium was much new muscular tissue.

Mr. H. L. BARNARD (London) asked whether stricture ever followed prostatectomy. In one case he found when he examined the prostate that he had drawn out half an inch of the membranous urethra. By a misunderstanding of his instructions the bladder was not washed out per urethram for three weeks and when he examined the case he found the floor of the bladder closed and only a dimple marked the former urethral opening. He was able by forcibly pushing a catheter through to restore the patency of the canal. To avoid this danger he advised that the prostate should be removed in two pieces and that the bladder should always be washed out per urethram. The drainage tube should be removed from the bladder by the seventh day at latest. In one case he had operated on a small fibrous prostate and he had been only able to get it away in shreds, yet the patient did well. He thought very highly of the acid phosphate of sodium as an acidifier of the urine. It should be given as a beverage of the strength of a drachm to the pint. It was best not to operate until the urine was acid and

then no phosphates would be deposited on the edges of the wound.

Mr. W. SHEEN (Cardiff) had removed a small fibrous prostate weighing only five and a half drachms. The patient recovered completely.

Mr. JORDAN LLOYD thought that strictures might occur after prostatectomy. In some cases a "diaphragm" might develop between the bladder and the prostatic cavity. In small fibrous prostates there might be a stricture between the bladder and the urethra.

Mr. WALKER, in reply, said that the specimen which he had obtained was the only one known in which two years had elapsed since the enucleation. He did not think it possible for the prostatic urethra to remain intact even if the prostate were removed in two pieces.

Mr. A. H. TUBBY (London) read a paper on

Spinal Osteomyelitis.

He referred to the rarity of the cases and the scanty literature. Three degrees of the affection were recognised: (1) a comparatively mild form, from which the patient recovered; in this form there were acute inflammation and thickening of the periosteum; (2) a more severe form, involving the periosteum and superficial layers of bone, which might or might not go on to suppuration; and (3) a violent form, in which suppuration occurred and where meningitis and myelitis were constant complications. The object of the paper was to call attention to the less acute varieties, and illustrative cases were given of the first and second degrees which had occurred in his practice. In both these cases, although there were rigidity and deformity of the spine, full recovery occurred within 12 months with complete restoration of function. The connexion of stomatitis with suppurative periostitis of the cervical spine was very marked and in both the cases described acute inflammation of the gums and alveolar margins had preceded the onset of the spinal symptoms. With regard to the violent form it was usually due to invasion of the spinal column by streptococci or staphylococci and the exciting causes were local septic disorders, such as boils, inflammation of the gums, septic nasal and naso-pharyngeal affections, mastoiditis, whitlows, or osteomyelitis elsewhere. It often followed pneumonia, scarlet fever, or measles. In six out of 41 cases there was a history of local injury. The disease was more common in children and adolescents but it was not confined to them. It occurred twice as frequently in males as in females. The lumbar region was most commonly attacked and then the cervical. The neural arches were more often affected than the bodies of the vertebræ. The local symptoms were tenderness, agonising pain on attempting to move, and there might be a localised œdema if the neural arches were affected. Nerve symptoms might be present and a case had been diagnosed as Landry's paralysis. The diagnosis of disease of the bodies was very obscure but if the neural arches were inflamed the diagnosis was easier. Suppuration occurred in 24 out of 62 cases. Important points in the diagnosis were the history of sudden onset, the early appearance of rigidity of the spine, the complication of acute nerve symptoms, the rapid development of intense general illness, and the complaint of agonising pain in the back. The prognosis in the periosteal cases was favourable but the more violent types were very fatal, the mortality varying between 50 and 75 per cent. In the milder varieties without suppuration rest in the recumbent position, followed by the use of a spinal support, was all that was necessary. In the suppurative cases pus must be found and let out at the earliest possible moment.

Mr. R. T. H. BUCKNALL (London) read a paper on

Two Cases of Operation involving the Thoracic Duct.

The first patient underwent an operation for tuberculous cervical glands of the left side for the third time. Within 24 hours of the operation he became very weak and a clear yellow fluid was observed to be flowing from the wound to the extent of from two to three pints a day. The patient steadily lost strength. The wound was explored and it was found that about two inches had been removed from the thoracic duct. The free end from which the chyle was flowing was tied. The patient soon improved and the wound healed. He died two and a half months later from miliary tuberculosis. The second patient was a woman whose breast had been removed for malignant disease two years previously. She had some enlarged glands in the posterior triangle. These were removed and it was found that the thoracic duct had been slowly occluded.

Mr. BARNARD referred to the researches of Mr. Cecil H. Leaf who had shown that there were many junctions between the venous and the lymphatic vessels. He (Mr. Barnard) had twice ligatured the thoracic duct without any harmful results.

Mr. JAMES BERRY (London) read a paper on

67 Cases of Cleft Palate treated by Operation, with special reference to After Results, and a Demonstration on Ten Cases.

He stated that the main object of the paper was to give an exact account of all the cases of cleft palate that he had treated both in hospital and in private practice in the hope that he might thereby induce other surgeons who employed different methods to do the same. All his cases had been treated on a uniform plan on the lines of the well-known operation practised by his old master, Sir Thomas Smith. He did not think that the advantages of the operations in very early infancy either by large flaps or by the forcible approximation of the maxillæ had at present been proved. He considered the third year of life to be the best period for the cleft palate operation in most cases and that the third month was the best period for the hare-lip operation. Of his patients 43 had been operated on over the age of four years and this was later than he liked. They were mostly patients in whom operation had been unsuccessfully performed by other surgeons or had been declined by the surgeon or by the parents. In no case under the age of 20 years had he ever declined to attempt an operation, however wide the cleft, and he exhibited photographs of some exceedingly wide clefts which he had completely closed. He laid great stress on the complete detachment by curved scissors of the soft palate from the posterior edge of the palate bones and also on placing the lateral incisions sufficiently far outwards and backwards. He pointed out the great importance of a moveable soft palate in the production of speech. He maintained that the view advanced by Mr. Arbuthnot Lane that the reason of the peculiar speech was that the outgoing air did not pass through the nose was totally opposed to the facts. Mr. Berry mentioned the chief consonants which were mispronounced by those with cleft palates and said that the changes were due to air escaping through the cleft and through the nose. With regard to the forcible approximation of the superior maxillæ he thought the operation unjustifiable. Of ten cases published and unpublished, which were all that, to his knowledge, had been performed in this country, four had died as the direct result of the operation. The cleft of the palate underwent a natural diminution, even without any operation, but especially if the hare-lip had been treated. The results of Mr. Berry's 67 cases were given in a paper distributed at the meeting. None of the patients had ever been seriously ill. In three cases only Mr. Berry did not succeed in closing the cleft but none of these had yet had a second operation. As to the speech, although he admitted that in no case could it be said absolutely to be perfect, yet in several cases it closely approximated to perfection, and in very many cases it was good. It was remarkable how much improvement occurred in patients operated on as late as 14 or even 18 years of age. Mr. Berry did not claim any originality in the method he employed, except in details. He thought it would be well if those who advocated extensive operations in the first year of life would give their results, especially as to the soft palate and the speech. A demonstration was given on ten of Mr. Berry's cases brought for the purpose; the patients' ages ranged from two to 16 years and the period since the operation from eight months to nine years.

Sir CHARLES BALL concurred in the importance of the detachment of the soft palate.

Mr. C. F. CUTHBERT (Gloucester) inquired as to the position of the patient preferred by Mr. Berry. He himself placed the patient so that the head hung over the end of the table.

Mr. W. M. WILLIS (Nottingham) mentioned that he had attempted Brophy's operation but complete necrosis of the bones resulted and the child died.

Mr. C. P. CHILDE (Southsea) employed Hagedorn's circular needles for the cleft-palate operation and not special needles.

Mr. BERRY, in reply, said that the patient was always in a sitting position with the shoulders raised and the head thrown back. The anæsthetist must be very skilful. He preferred rectangular needles and always used one silver stitch with a Smith's needle.

Mr. W. J. DE C. WHEELER (Dublin) read a paper on

The Talma-Morrison Operation.

The patient was a man 47 years old. There was no history of alcohol. He was six feet high but weighed only eight stones. He had great ascites and on tapping two and a half gallons were drawn off. The liver was then found to be enlarged. 14 days later two gallons were removed. Then the abdomen was incised below the umbilicus but the fluid re-accumulated. Then the abdomen was opened above the umbilicus and the omentum was drawn out. The upper surface of the liver was scraped with a blunt Volkmann's spoon and then the diaphragmatic peritoneum was rubbed with a cloth and some peritoneum was shifted from the abdominal wall. The operation was performed nine months ago; the patient had been tapped once since and two pints were drawn off but since that he had been well and able to do his work. He had gained 2 stones 7 pounds in weight.

Mr. SHEEN read a paper on

A Case of Ligature of the Innominate Artery.

The patient was a man, 46 years old, with a pulsating swelling above the right clavicle and the aneurysm involved the second and third parts of the subclavian artery. Mr. Sheen tied the innominate but the pulsation returned the following day. At a subsequent operation the subclavian artery was tied in the second part and the aneurysm consolidated. Nine months later the patient was still well.

Mr. J. D. MALCOLM (London) read a paper on

Two Cases of Partial Sloughing of the Vermiform Appendix.

In these cases small gangrenous patches occurred in the appendix without any symptoms. Mr. Malcolm considered that they could not be due to inflammation and looked upon them as analogous to the "spontaneous sloughing" of the wall of the stomach.

Mr. W. SAMPSON HANDLEY (London) gave a lantern demonstration on

Epigastric Invasion of the Abdomen in Surgery of the Breast.

He believed that the embolic transfer of cancer particles along the trunk lymphatics to the axillary glands and thence to the supra-clavicular glands and the blood was a mere side issue in the process of dissemination. The main agent in the spread of carcinoma was "permeation"—that is, the centrifugal growth of tendril-like lines of cancer cells along the fine vessels of the lymphatic plexuses. The process of visceral dissemination began as soon as permeation had traversed the fine lymphatic anastomoses of the body wall and had reached the lymphatic plexuses underlying the pleural or peritoneal endothelium. Cancer cells then escaped into the serous cavities and attacked the serous surface of the viscera. Immediately below the ensiform cartilage the subperitoneal fat was separated from the lymphatic plexus of the deep fascia—the plane of the parietal growing edge of a cancer of the breast—merely by a single layer of fibrous tissue, the linea alba. The epigastric region, therefore, proved the weak spot in the defences of the body cavity and cancer of the breast frequently reached the peritoneum by this route before it had succeeded in penetrating the thick thoracic wall. Hence in about 12 per cent. of all necropsies metastases were found in the abdomen, while there were none in the thorax. The capital defect of the present operation for cancer of the breast was that it ignored the danger of epigastric invasion. The risk must be met by excising the epigastric deep fascia down to a point two inches below the tip of the ensiform cartilage, a step involving no technical difficulty and not adding to the risk of the operation. The erroneous belief that cancer of the breast spreads along the skin had, especially in America, led to the removal of an unnecessarily large area of skin. It was usually sufficient to remove a circle of skin from four to five inches in diameter, centred on the primary growth. A linear incision, two inches long, running downwards over the ensiform cartilage from the circular incision afforded access to the epigastric region and another linear incision joining the outer part of the circular incision was required to give access to the axilla. The flaps should be undermined in all directions and a circular area of deep fascia from nine to ten inches in diameter removed, with the pectoralis major, except perhaps the clavicular portion. This operation had one immediate advantage—the skin edges could be approximated without any tension. The nutrition of the flaps remained excellent in spite of their extent and rapid healing with freedom from pain and pyrexial disturbance was thus insured.

STATE MEDICINE.

FRIDAY, JULY 28TH.

Bailie W. F. ANDERSON (Glasgow) opened a discussion on

Infant Milk Depôts.

He said that in view of the appalling death-rate of infants he had communicated with the British consuls of 60 of the leading cities of the world to discover how England and Scotland compared with other countries. He had been supplied with the total population and the general and the infantile death-rates. He found that in one or two cities where the general death-rate was high the infantile death-rate was distinctly lower than that of Great Britain. The only reason he could find for this was that milk depôts had been established. In Glasgow a central milk depôt was in full work and with very gratifying results. The principal details of the scheme were thoroughly pure milk, put into absolutely clean bottles and then sterilised. The cost was 2*d.* a day for the milk needed for the youngest infant, increasing to 2½*d.* and to 3*d.* with the increase of age. There were undoubted difficulties. Often milk was only obtained for infants when they were practically at death's door from intestinal disorders. Then when the child had improved with the pure milk a return to the old method of feeding would be made with disastrous effects. There were no means to get accurate statistics except in the case of infants who were taken to the central depôt. These could be weighed and watched. Lastly, there could be no doubt that there was some difficulty with dairymen and the annual cost was not at present met by the payments made for the milk.

Dr. T. D. LISTER (London) considered that future health might be made or marred during the first year of life. The numerous deaths from starvation and from acute and chronic intestinal disease were to a great extent preventable. But many infants were damaged for life by improper milk. He considered that the provision of infant milk depôts gave the most satisfactory solution for exterminating bad or starvation foods. The occurrence of scurvy from sterilised milk was rare and in reality constituted nothing more than a bogey. Out of 21,000 infantile deaths some 50 per cent. were due to improper food but only seven were ascribed to scurvy. If a case of scurvy occurred in connexion with a milk depôt it showed that there had been a lack of proper supervision of the infants supplied. Each case ought to be under a medical certificate. It was impossible to wait for a pure milk-supply but the municipal milk depôt would be a strong factor in bringing about such a pure supply.

A contribution to the discussion by the Hon. NATHAN STRAUS (New York) was read by Dr. C. KILLICK MILLARD. Mr. Straus showed that in that city one out of every three died before five years of age. Because of this appalling mortality he had started a private milk depôt. His plan was to provide pasteurised milk to the poor at a uniform charge of 2½*d.* a day. The indirect results of the effort had been quite as important as the direct. The milk-supply in the neighbourhood had greatly improved. He pointed out that there had been a very appreciable diminution in infant mortality and gave statistics from a hospital for waif children in which the death-rate was decreased from 42 before the introduction of the milk to 16. He was convinced that the effort should be rather municipal than private because of the great demand created.

Dr. PHILIP BOOBBYER (Nottingham), the President of the section, believed that there was much in favour of municipal milk depôts and that the movement would be a permanent one. One principal discouragement was that it did not appear that they could be made to pay. Scurvy from sterilised milk, he was sure, was nothing more than a mere bogey. He instanced the effort made in his district by which the sewage farm was made to supply the required milk and provided an excellent object lesson to milk producers.

Dr. H. COOPER PATTIN (Norwich) stated that the causes of infantile mortality were often pre-natal and that the dieting of parents was an important prophylaxis.

Dr. T. WHITESIDE HIME (Bradford) said that a milk depôt was merely another factor in relieving a mother of her responsibility to her offspring. The quality of the milk supplied, in his experience, was not good and was not the material for young infants. Ordinary cow's milk was nothing but poison for them; they needed a lac-albumin.

Dr. T. F. S. CAVERHILL (Edinburgh) contended that milk was the proper food for infants and that the public needed

instruction in the necessity for pure, clean milk. There were only a few water-borne diseases and yet great attention was paid to the purity of water, while there were at least ten diseases propagated by milk and still the milk trade was merely prevented from being fraudulent. It was a sad fact that near Edinburgh in the rural districts there was the highest mortality among infants.

Dr. D. S. DAVIES (Bristol) urged that there should be trained health visitors in all districts supplied by the milk depôts.

Afterwards a joint discussion with the Section of Laryngology, Otology, and Rhinology on

The Infectivity and Notification of Diphtheria, with special reference to Latent Forms of the Disease,

was held.

INDUSTRIAL HYGIENE.

FRIDAY, JULY 28TH.

Mr. W. F. DEARDEN (certifying factory surgeon for North Manchester) opened the first discussion by reading a paper on

Accident and Poisoning Reports.

After some introductory remarks, in which he mentioned that the status of the certifying factory surgeon was not what it ought to be, he reviewed the various Factory Acts in their relation to the work of the certifying factory surgeons, and commented on the unsatisfactory nature of the time limit of disablement to qualify for notification. He then gave an outline of the duties of the certifying surgeons and stated that the surgeon had four factors on which to base his judgment of the actual causation of an accident—namely, the evidence of the employer or his agents; the evidence of the injured person; the understanding he himself had acquired of the machine, apparatus, and process; and his knowledge of the necessary particulars respecting the injury. The duty of devising methods of protecting dangerous machines devolved upon the inspector and the surgeon's report enabled him to decide when a visit from him would be necessary for this purpose. As these appointments were mostly held by medical men in general practice who were well known to both employer and employed there was seldom any difficulty in obtaining the information required. The systems of accident certification in France and Holland were then reviewed. In France every accident occurring to a workman whilst engaged in his occupation must be reported to the mayor of the municipality within 48 hours. The mayor notified the inspector of factories and also the magistrate of the ward who made an inquiry and transmitted the result to the president of the civil court of his division. This official had power to make an order in permanent disablement and fatal cases fixing the amount of compensation. In Holland the administration of the law concerning industrial accidents was under the control of a department of State insurance. Any medical practitioner could, on application, be appointed a medical officer of this department. Compensation was settled by the directorate of the department acting under the advice of a chief medical referee. Compensation was granted to the extent of 70 per cent. of the average weekly earnings. Mr. Dearden considered that these systems formed a good object-lesson for our legislators and suggested that the factory surgeon's report would prove a useful aid in determining the length and degree of disablement. He was of opinion that the present system of investigating accidents suffered from the want of a general supervision by a principal surgeon who should have a thorough practical understanding of the work. The reporting upon cases of industrial poisoning by the certifying surgeon was quite a modern requirement though it had already borne excellent fruit. A large number of occupations came under the regulations of the Factory Act of 1895 in this respect. Persons who had to handle foreign hides and skins, wool-sorters, and workers in foreign hair were liable to be attacked by anthrax. The poisonous effects of lead were most prominent in connexion with the manufacture of white lead, paints, and colours, electrical accumulators, metal smelting, printing, tinning and enamelling, file-cutting, and glass polishing. Galvanising works and the manufacture of emerald green were mainly responsible for arsenical poisoning; lucifer-match making for phosphorus poisoning; and the trades of hatters, furriers, makers of thermometers and barometers, electro gilders, and manufacturing chemists for mercurial poisoning. The number of cases of lead poisoning in the year 1899, according to the chief medical inspector of factories, was 1258. This number had been reduced to 597 in 1904 and a corresponding reduction occurred in the case of other industrial poisonings. The remarkable reduction in cases of lead poisoning had mainly taken place in the pottery industries and the manufacture of white lead owing to the careful supervision exercised over those trades by the special rules brought into force.

Dr. THOMAS WATTS (Hyde) expressed himself as very pleased that the Government had dropped the Accident (Mines and Factories) Bill. He was of opinion that the passing of that measure in its original form, which would have involved doing away with direct notification to the certifying surgeon, would have been a retrograde step in factory legislation and would practically mean that very few reportable accidents would be notified at all.

Mr. C. F. BRYAN (Leicester) commented on the great benefit accruing from the report of the certifying surgeon under the Workmen's Compensation Act. He considered the time limit objectionable because serious symptoms, such as septicæmia, &c., might supervene later in persons who had been able to work for five hours on the three days following an accident. He would like to see cases of accidents not due to machinery but, e.g., to faulty stairs reported to the surgeon in the first instance.

Mr. SEYMOUR KNYVETT (H.M. Inspector of Factories, Birmingham) agreed with previous speakers as to the importance of the certifying surgeons' reports and considered that owing to their intimate local relations with employers and workpeople they might have a greater opportunity for unfettered inquiry than in the case of the inspectors. He also gave a tribute to the excellence of the work done by lady inspectors. He could not agree with the suggestion that the surgeon's investigations should form an item of expert evidence in cases taken to the law courts for compensation, as the surgeon's reports at present possessed a confidential character, absolutely essential to their utility, which would be lost in their preparation for public evidence. He earnestly advocated an extension of the time limit and hoped that the section would do all in its power to extend the reporting of illnesses, especially of diseases acquired by workers in brass.

Dr. H. W. LANGLEY BROWNE (West Bromwich), the President of the section, considered that records should be kept of the duration of disablement of an injured person. These would be valuable for future reference. In France, Germany, and Austria all accidents were graded on a regular scale, No. 1 representing the slightest accident causing disablement from work and No. 100 representing fatal accidents or those causing permanent disablement. Some such system as this might avoid conflicting medical evidence in courts of law. He considered that the post of certifying surgeon should be combined with that of medical referee under the Workmen's Compensation Act and often with that of medical officer of health. The officer should be well paid and put in the same position as other inspectors both as to salary and pension.

Mr. DEARDEN then briefly replied.

Dr. D. J. A. CHOWRY-MUTHU (Wells) introduced the next subject for discussion,

Poverty in relation to Disease and Degeneration.

He expressed the opinion that all the social evils of the present day had been the outcome of trying to enjoy the sweets of civilisation without attempting to take up the responsibility which that civilisation brought with it. When men like Mr. Charles Booth declared that 30 per cent. of the entire population of London were unable to obtain a livelihood; when Mr. J. S. Rowntree stated that from 25 to 30 per cent. of the town populations of the United Kingdom were living in poverty; when they were confronted with the fact that about 400,000 people in London alone were living a one-room life, where decency was not possible and morality was a farce, then England was face to face with a terrible problem requiring all her strength and wisdom to solve. It was one of the ironies of the present-day civilisation that while this country was constantly extending its borders in circumference, in the very centre of the empire its sons and daughters found no room to live in and went about the streets in want of the barest sustenance that was not denied to the so-called savage or the Hottentot. Poverty robbed the physical efficiency, dulled the intellect, filled the mind with dread and despair; constant underfeeding led to the slow starvation of all the organs of the body,

which could not perform their work efficiently. The curse of poverty followed a man from childhood to the end of his life. In infancy a large majority of the children could not get the natural food of their mothers because so many of these mothers were themselves underfed or obliged to be at work all day and therefore unable to suckle their children. The consequence was that the growing generation was to a very large extent fed on artificial food which aggravated the precariousness of their lives and increased infant mortality to an alarming extent. Dr. E. W. Hope of Liverpool had stated that the deaths in that city among children under three months old either wholly or partially fed on artificial foods were 15 times as great as they were among an equal number of infants fed on breast milk. Three-fourths of the 150,000 infants who died annually in this country during the first year of life had been fed artificially. The slaughter of the innocents was not the only result of poverty and overcrowding. The condition of the children who survived was worse than that of those who died in infancy. A very large proportion of children attending schools were underfed. How could the child who went to school constantly hungry give heed to lessons or do justice to education? The lack of food impoverished the body, interfered with the calcification of the teeth and the formation of sound bone, and caused stunted body and rickety constitution. The speaker from his experience in the East end of London could corroborate the views of Dr. William Hall of Leeds as to the superior development of Jewish children, which was due to their being better fed and cared for than the children of the Christian poor. He considered that consumption was not so much a microbe or filth disease as a disease of poverty. With regard to the remedies for the state of affairs described, he considered that the system of workhouse and Poor-law relief had not been a success, because it was worked on the principle that no man should receive help till he was destitute and broken down. They allowed their people to become paupers, vagrants, lunatics, drunkards, and criminals, and then built workhouses, prisons, asylums, and almshouses for them, which was like letting a patient reach the last stage of consumption and then erecting a sanatorium to save his life. Dr. Chowry-Muthu strongly recommended the adoption in this country of some such system as the Elberfeld system as worked in Germany. This was an organised attempt on the part of well-to-do city men to give their services freely to look after the poor and to relieve their several necessities without pauperising them. Every effort was made to find work for the unemployed. All help to the needy, the sick, the aged, and the infirm was controlled by one central agency without fuss or friction. So elastic was its work that even the provision of coals, blankets, garments, soup kitchens, &c., was administered by this system, and so economically was it managed that it had saved hundreds of pounds to the ratepayers ever since it had been instituted. The system of compulsory insurance of working men against accident, sickness, convalescence, and old age as adopted in Germany was also well worth the study of England. In conclusion, he suggested the adoption of milk depôts, women inspectors to instruct the mothers in feeding and hygiene, day nurseries where children could be looked after while the mother was at work, open-air schools in the country, and free meals for the children of the poor and destitute. They wanted a systematic organisation all over the country undertaken by the nation on behalf of the children. The money spent on the rising generation was a good investment and would yield a hundredfold in years to come.

Dr. C. E. REINHARDT (London) considered the question more a political than a medical one and traced the poverty of England to four conditions: (1) the state of land tenure, in which the man who did least work reaped most benefit; (2) over-population, the most fertile being those who lived in the worst surroundings; (3) disease, especially consumption; and (4) alcohol. As remedies he advocated the garden city scheme, in which the land belonged to the people; free education and support of children; reduction of alcoholic consumption; and hygienic education.

Dr. J. BROWN (Bacup) considered alcohol the chief cause of poverty and disease. He thought milk depôts were useful but that it was more important to nourish properly the mothers so that they could provide their own milk.

Dr. J. DARLEY WYNNE (Clonmel) remarked that in Ireland the death-rate from consumption, instead of decreasing to a marked extent as it had done in England and Scotland during the last 50 years, had actually increased. Though the people in Ireland were very poor yet there was not so much abject poverty as in many large English towns and he thought they must not lose sight of the fact that dirt and bad sanitation were equally important factors with poverty in the causation of disease.

Mr. BRYAN referred to the fact that Leicester was about to start a milk depôt. Although a member of the sanitary committee he was not much in favour of the scheme. He thought milk ought to be given to the people free and urged the advisability of more medical men giving free lectures to the people on hygiene.

The PRESIDENT of the section considered that one advantage of sending children to school was that they were kept there in better surroundings than at home for a good part of the day. He was in favour of milk depôts. He thought they were going the wrong way about the treatment of consumption and should spend money on the improvement of the dwellings of the poor before they erected sanatoriums for them.

Mr. KENNETH W. GOADBY (London) read a paper entitled

A Preliminary Note on the Blood in Lead Poisoning.

He said it was notorious that workers in lead factories, and especially in those departments in which the workers were exposed to lead dust, suffered frequently from anæmia. The facies became very pale, often to a much greater degree than the actual blood count might indicate. Associated with the anæmia was a progressive loss of orbital and buccinator fat which, with other well-known appearances, made up the saturnine cachexia. Some little time ago Dr. T. M. Legge called his attention to a paper by Dr. Hamel in which were described the results of an examination of the condition of the red blood corpuscles in lead anæmia. In the paper referred to Dr. Hamel confirmed the findings of somewhat minute basophile granules in the red corpuscles of lead workers as had been noted by Lazarus, Grawitz, and by Plehn in malaria. These basophile granules were frequently found in various species of anæmias and had been the origin of a considerable amount of discussion as to their exact nature. Schumann had described their presence in bothriocephalous anæmia. From the staining reactions, in that they did not show a selective action with methylene green, Bloch considered that they were not nucleinic acid and that as they took a blue colour with Nocht's stain which coloured chromatin red they were not of nuclear nature. In staining with Leishman's stain the granules were a faint bluish green and were easily seen, the colour being entirely different from that of the nuclei of normoblasts. Grawitz concluded that the granules in question were a species of granular degeneration of the red cells and that they made their appearance when a good deal of blood destruction was in progress and he called especial attention to their appearance in plumbism as did Behrend, White, and Pepper. Hamel in the paper referred to above considered that the presence of these basophile granules was to be regarded as diagnostic of lead anæmia and gave the results of a number of individuals in which he found these bodies and considered that they were the first sign of lead intoxication. With regard to the general blood condition Hayem said that there was no increase of the hæmoglobin index. Malassez and Zimm both agreed that there was very little if any increase in the number of leucocytes. Oliver said that the hæmoglobin often fell below 50 per cent. and Osler was inclined to regard the anæmia as rarely more than a 50 per cent. reduction in the red corpuscles. All observers agreed that there was no leucocytosis. At the suggestion of Dr. Legge Mr. Goadby commenced to investigate the condition of the blood in lead poisoning some little time ago but owing to the pressure of other research he had been unable to devote as much time to the subject as it deserved. He had examined a number of films from cases of anæmia in three lead works, two of the factories being devoted to white lead manufacture, and the other including desilverising, smelting, reducing, and the manufacture of litharge. He could confirm the finding of basophile granules in a large percentage of the cases which showed a definite anæmia and in a few in which the anæmia was not at all marked, while those persons who were examined on their starting work for the first time in lead processes showed no Plehn's granules. The films were stained with Leishman's stain and with hæmotoxylin and eosin. Of 30 cases of distinct anæmia the granules were found in all but were apparently somewhat more numerous in the more severe cases. In the case of men who had been engaged in lead processes

TABLE OF EXAMINATION OF THE BLOOD IN TEN CASES OF LEAD ANÆMIA.

Case.	Red blood corpuscles.	White blood corpuscles.	Hæmoglobin	C Index.	A	B	C	D	E	F	G	H	I	J	K	Work.	Notes.
1	3,460,000	7,000	60%	0·7	20	8	6	63	3	0	+	–	+	–	+	Paint mills. Factory 3.	4 years.
2	1,707,000	9,000	45%	1·4	38	7	8	46	1	0	+	+	+	+	+	Paint mills. White lead stoves. Factory 3.	5 ,,
3	2,620,000	20,000	55%	1·0	32	4	4	58	2	0	+	–	+	–	+	Paint mill. Factory 3.	6 ,,
4	1,334,000	10,000	60%	3·0	32	4	8	56	0	0	+	–	+	–	+	Dry whitelead packing. Factory 3	3 ,,
5	3,210,000	8,000	54%	0·9	41	1	4	52	2	0	+	+	+	–	+	Whitelead grinding. Factory 3.	3 ,,
6	1,347,000	10,000	60%	3·0	32	3	3	59	2	1	+	+	+	–	+	White beds (stacks). Factory 3.	7 ,,
7	3,760,000	9,000	65%	0·9	—	—	—	—	—	—	—	—	—	—	+	Press and stoves. Factory 1.	4 years. Jaundice twice.
8	2,200,000	10,000	65%	0·7	—	—	—	—	—	—	—	—	—	—	+	Desilverising (stills). Factory 2.	Double wrist-drop. 20 years' work.
9	3,360,000	8,000	50%	0·6	—	—	—	—	—	—	—	—	—	—	+	White beds (stacks). Factory 1.	Worked in Italy. 4 years in present employment.
10	3,420,000	9,000	60%	1·0	16	1	4	76	3	0	—	—	—	—	+	White beds (stacks). Factory 1.	Worked in Italy. ? length of time.

A, lymphocytes; B, transitional; C, large mononuclear; D, polymorphonuclear; E, eosinophile; F, basophile; G, microcytes H, megalocytes; I, poikilocytes; J, nucleated cells; and K, basophile granules in erythrocytes (Pichn's granules). Corpuscles, Thoma Leitz method. Hæmoglobin, Haldane's method. Films stained, Leishman's method..

for a considerable time the number of basophile granules was not so marked. The red blood cells in most of the cases he had examined showed a good deal of irregularity both in size and shape as well as in the reaction to the stain used. Irregular staining was common as was vacuolation. The erythrocytes of the blood in lead poisoning appeared to be damaged more easily in manipulation than those in other kinds of blood he had been working with and this might perhaps account for the somewhat irregular shapes which were so common. At the same time there were frequently present well-defined microcytes. Nucleated red corpuscles of any variety were, as far as he had seen, extremely rare, only a small number having been seen. The blood platelets appeared to be normal. He did not feel at present at all satisfied that the presence of the basophile granules was of such sufficient importance as to regard them as diagnostic of lead anæmia. They undoubtedly occurred in other conditions widely differing, while in two Italians he found these granules before they had worked at all in a lead process. They had suffered from "fever" in Italy. Their significance was probably confined to the marking of the establishment of some destruction of the blood and their appearance corresponded to the commencement of anæmia and did not antedate the affection. In the ten cases furnishing the blood counts given in the table a considerable reduction in the number of red cells was seen. In three instances this was very marked and was much below that given by Osler or Oliver. The men were all very pale but were doing their work without any complaint of feeling ill. Two of them showed no blue line. The hæmoglobin, except in two cases, corresponded to the corpuscular count. Little or no difference was observed in the staining properties of the leucocytes. The absolute number did not appear to be increased in any marked degree. In the differential counts there did not appear to be much change from the normal. If anything the lymphocytes were a little increased and the polymorphonuclear cells decreased.

There was no discussion and the proceedings terminated with a vote of thanks to the President of the section.

LARYNGOLOGY, OTOLOGY, AND RHINOLOGY.

WEDNESDAY, JULY 26TH.

This section met under the Presidency of Dr. F. W. BENNETT (Leicester) who delivered a brief address welcoming those present. He referred to the progress of laryngology and otology in Leicester and spoke of the importance of the subjects from the educational standpoint.

Dr. W. MILLIGAN (Manchester) and Mr. E. B. WAGGETT (London) opened a discussion on

The Lines of Treatment in preventing Acute Middle-ear Suppuration from becoming Chronic.

Dr. Milligan in his opening paper said that treatment should aim at cutting short extension of an inflammatory process and, if possible, before exudation had occurred. He advocated an early and free incision of the membrana tympani as of the most importance. One unnecessary paracentesis was far better than the risk of extension of the disease. Spontaneous perforation of the drum came too late and the resulting drainage was inefficient. He spoke of the possibility of spreading septic infection by the injudicious use of Politzer's air douche. Nasal and post-nasal disease induced chronicity and should be treated. Dr. Milligan treated it surgically after the temperature had fallen and remained normal for five days; in the meantime he used antiseptic douches and sprays. To insure free drainage of the ear in acute cases he was in favour of incision of the mastoid. In the exanthematous cases if free incision of the drum failed in seven days to arrest the disease then he opened and cleared out the mastoid cells; in the non-exanthematous cases if after three weeks free incision of the drum had been inefficient then he performed antrectomy. In conclusion, he deplored the lack of teaching otology which he held to be in some measure responsible in the past for acute middle-ear suppuration becoming chronic.

Mr. WAGGETT'S line of argument was that the natural termination of an acute otitis was resolution and where chronic suppuration supervened that was due to certain conditions of an accidental nature. The chronic suppuration was in a sense a fresh disease and might be quite independent of the infective agent causing the initial acute otitis. In treating cases of acute otitis three main considerations must be kept in mind. 1. The assistance of the inflammation regarded as a wholesome reaction against an abnormal irritant. 2. The direct prevention of those accidents which underlie chronic otorrhœa. 3. The avoidance of any interference which might possibly engender or precipitate one of those accidents. Mr. Waggett applied these principles of treatment to serous, muco-purulent, and purulent cases respectively. 1. Where the exudate in the tympanum was merely serous and the reaction a mild one the case might as a rule be brought speedily to an end by medical treatment, rest and warmth in bed being the most essential. Paracentesis was only called for if pain were severe and it was to be regarded as a palliative and not as a hastener of the cure. 2. With muco-purulent catarrh, seen typically in the adenoid case, the best treatment was the immediate removal of the adenoids or other source of

infection in the nose or post-nasal space. That measure not merely cut short the acute otitis but prevented chronicity, or, more strictly speaking, the frequent recurrence of the otorrhœa. Hot instillations of glycerine and carbolic acid, six grains to the ounce, would give relief of pain pending the operation, which should be done within 24 hours of the diagnosis. Where there was true pus in the tympanum neither medical treatment nor mere removal of the remote causes would suffice to prevent chronic otorrhœa following. It was the rarest thing to find an acute case becoming chronic where more careful treatment was adopted; on the other hand, out-patient rooms were filled with cases of chronic otorrhœa which had commenced in an acute attack. It amounted to this, that exclusive of tuberculous cases there was a vast number of chronic cases which would never have existed had they been treated thoughtfully during the acute onset. Those cases were chronic either because reinfection from without was constantly occurring or because the organ could not get quit of a source of infection within itself. To the former class belonged those cases which speedily yielded to mere toilet of the meatus or to the removal of purulent foci in the upper air passages. In the second class the trouble was essentially mechanical in origin, such as the difficulty of aseptic fluid draining from the recesses of the attic and mastoid, the impossibility of an inspissated sediment doing so, the impregnable position occupied by micro-organisms which had entered the Haversian canals. In the treatment of acute suppuration it was necessary, in the first place, to avoid injecting pus into the mastoid by using Politzer's bag. An illustrative case was given in which septic material was actually driven through a deficiency in the mastoid into the tissues of the neck. In the second place, free paracentesis must be performed without an hour's delay, if at the moment of inspection the pus might be upon the point of penetrating into the mastoid or the ulceration of the muco-periosteum be just reaching the bone and laying bare the Haversian canals. Even after paracentesis Politzer's inflation was useless as a method of cleansing and Young and Milligan's experiments had shown how it might carry a spray of pus to the mastoid antrum. All pus, Mr. Waggett continued, could not be completely removed from the ulcerated tympanum. It must therefore be kept as much diluted as possible with continuous or very frequent irrigation of the meatus. In the vast majority of cases that treatment, coupled with warmth in bed, suitable diet, the exhibition of salicylate of quinine and purgatives, and the instillation of glycerine and carbolic drops, would prove quite successful. Politzerisation must not be employed upon the healed ear until all redness had departed for a fortnight. Where pain, tenderness, and fever persisted in spite of such treatment the mastoid was involved. With medical treatment, cold applications or leeches, many of the cases got perfectly well. But even in the absence of all the classical signs of mastoiditis, including the dropping of the postero-superior wall of the bony meatus, a mastoid operation must be performed if a copious discharge persists. Such a discharge would be coming from a large ulcerated area of the muco-periosteum of the mastoid antrum and would insure a chronic otorrhœa if not dealt with by operation.

Mr. T. G. OUSTON (Newcastle-upon-Tyne) read a paper on

The Lines of Treatment in preventing Acute Middle-ear Suppuration from becoming Chronic.

The discussion was then thrown open.

Dr. A. A. GRAY (Glasgow) was in favour of delaying paracentesis unless it was certain that pus was present. He would postpone performing an operation, as suggested by Dr. Milligan, upon the mastoid.

Mr. T. MARK HOVELL (London) did not support politzerisation in acute cases. A bulging membrane he considered ought to be incised freely. An operation for the removal of adenoids he would postpone until the illness was over. The suggestions made by Dr. Milligan for improving the drainage by a mastoid operation were heroic measures. Leeches were better than hot fomentations when the pain was over the mastoid process. Medical treatment was not sufficient.

GYNÆCOLOGY AND OBSTETRICS.

FRIDAY, JULY 28TH.

The proceedings of this section were opened by Dr. HERBERT R. SPENCER (London), the President of the section, calling upon Dr. R. BOXALL (London) to begin the discussion

On the Treatment of Albuminuria and Eclampsia

by reading his paper. Dr. Boxall said that it was necessary to point out the intimate association between the presence of albumin in the urine of pregnant women and the occurrence of eclampsia. The cause of the eclampsia was in part obscure and there were many theories—maternal and fœtal, chemical, nervous and mechanical causes—which had all been given in turn from time to time. If renal disease occurred during pregnancy it was liable to be acute and severe. If renal disease existed previously to pregnancy it was always likely to be much aggravated. First pregnancies were very liable to be attended by renal disorder and perhaps the increased intra-abdominal pressure was a factor in causing it. Cases in which the uterus was much enlarged seemed to support this idea as renal disorders were prevalent in these cases. The albumin in the urine was usually paraglobulin. He reviewed the pathological conditions and the parenchymatous changes in the kidneys, liver, and other organs. The death returns showed that renal disease and eclampsia occurring in association with pregnancy and childbirth were important factors in maintaining the death-rate from accidents in childbirth. He showed by a table and chart the relative deaths from puerperal convulsions, that the rate in England was maintained at a constant level, that latterly the rate in Ireland and Scotland had risen to above that of England and Wales, and that the rate of London was always lowest and remained so and at a constant level. The treatment of eclampsia was considered from two points of view—prophylactic and remedial. The treatment of albuminuria during pregnancy, which was the expression of the pre-eclamptic condition, constituted the prophylaxis of eclampsia. It resolved itself into the prescription of a milk diet and the maintenance of free purgation, free urination, and free perspiration. The remedial measures were: (1) increasing the action of the eliminating organs—bowels and skin—by reinstating the action of the kidneys, assisted in some instances by blood-letting and saline injections; (2) by sedatives—chloroform, chloral, and morphine; and (3) if these means failed, by diminishing the intra-abdominal and intra-uterine tension, rupturing the membranes and emptying the uterus. The operative measures most suitable under varying conditions were discussed; the importance of effecting delivery, when labour had once begun, expeditiously but with as little disturbance of the patient as was possible was strongly insisted on.

Mr. E. HASTINGS TWEEDY (Master of the Rotunda Hospital, Dublin) complimented Dr. Boxall on his scholarly paper. He thought that the eclamptic fit was due to a poison generated in the mother or the fœtus and was probably deposited in the solid tissues. Œdema, so-called, of the lungs was a common complication of eclampsia which had not been mentioned and was probably the result of medicine placed in the mouth of an unconscious patient. There might be œdema of the lung in certain cases, however, but more often than not it was caused by the medicine placed in the mouth of the unconscious patient. He did not believe in rapid delivery in unconscious cases. Morphine was given at regular intervals as a rule in most cases. The stomach was washed out and castor oil was passed down into the stomach by the tube, followed by saline injections. A similar tube was passed into the rectum and the bowel was repeatedly washed out. Subcutaneous injection of saline solution was often used and it appeared to be better than the intravenous injection. The first and second stages of labour were not interfered with, nor was labour induced but was left to come on by itself naturally, which it always did.

Professor J. W. BYERS (Belfast) thought that scientifically very little was known about the pathology of eclampsia. There might be several causes or processes at work. Primiparæ were the most frequently attacked and this fact should be carefully considered. At the Geneva Congress in 1896 he put the case strongly and pointed out that in certain localities eclampsia was more prevalent and also that in certain seasons of the year it was more prevalent. He thought that the fœtus was one factor in the causation of this disease. When the fœtus died early in the labour the cases appeared more mild. Twin cases were more liable to eclampsia than others of a single birth. He thought the morphine treatment was one which did a great deal of good; it unfortunately often killed the fœtus, however, but that might, from what

had been said, be an indirect advantage in disguise. He thought that the prognosis was difficult and uncertain. The metabolism of the liver appeared to be the cause rather than disturbance of the functions of the kidney as was popularly supposed, the kidney being the victim of the shortcomings of the defective hepatic action. The morphine treatment was found to be better than the chloroform and chloral treatment, to judge from the Rotunda practice in Dublin. He thought that delivery might be profitably expedited in some cases.

Dr. MARY SCHARLIEB (London) said that in India she found that cases often showed lesions in the liver; often in these cases there was no albuminuria. They left cases as a rule to a natural onset of labour and did not interfere; and, for the most part, this treatment did not have anything but satisfactory results.

Dr. JOHN CAMPBELL (Belfast) thought that pregnancy had a tendency to bring out any weakness in the kidneys. Some cases showed a congenital history in which they or their relatives were liable to renal disturbances apart from pregnancy. He used morphine in his practice and started labour by rupture of the membranes and then left the labour subsequently to nature.

Dr. T. WILSON (Birmingham) said that about eclampsia very little was really known. He thought it might be due to one of many poisons. He did not use the chloroform treatment as freely as formerly advocated and only used it very reservedly. He did not find that morphine did much good. The subcutaneous and intrarectal injection of saline solution did most good. He found in his experience that the hurrying on of labour often did good service. A method that he thought might be of use was vaginal Cæsarean section, as it obviated the unsatisfactory and injuriously stimulating action of mechanical dilators, apart from their other objections.

Dr. A. N. HOLMES (Dublin) said that some of the worst cases he had seen were those which occurred after labour; in some of these cases there was marked jaundice. Morphine was not as a rule pushed sufficiently far by those who had abandoned it as not of much benefit. If those who had abandoned the use of morphine had only used it more freely, but with caution, he was sure their conclusons would have been different.

Dr. J. INGLIS PARSONS (London) thought that because the kidney had to do extra work was the reason why it became affected. He thought that if the fœtus was the cause of the eclampsia and albuminuria it ought to be got rid of. He adopted this course and therefore expedited labour and found it to be the best. He thought that saline injections were of service as he had found them useful in his own practice.

Dr. EWEN JOHN MACLEAN (Cardiff) said that the toxæmic theories and the mechanical theories had given rise to scientific pathological conflict. He had used Bossi's dilator but did not feel encouraged to use it again. The importance of early recognition of albuminuria in pregnancy was very great and when found the condition should be rigorously treated. In many cases there was no albumin in the urine, even where symptoms leading to suspicion of renal disease were present. He found thyroid extract very valuable in increasing the renal efficiency and strongly recommended its trial by others.

Dr. F. W. FORBES-ROSS (London) said that Mr. Hastings Tweedy had stated, when referring to the possibility of the condition being due to a poison as one of the factors in causation, that he believed the poison to be in combination with the solid tissue, and Professor Byers believed the poison, on the other hand, was circulating in the blood. He (the speaker) thought that the clinical history and pathological conditions were such that both the former speakers were correct. At first the symptoms were those of a poison in the blood: headache, vomiting, dyspnœa, and albumin in the urine, with retarded metabolism, as instanced by the deficiency of waste products in the urine and the small amount of urine. Subsequently parenchymatous changes in the liver, kidneys, &c., and, finally, affection of the nervous centres producing convulsions pointed strongly to close combination with the solid tissues. The toxin of tetanus was known to be in organic combination with the cerebral cells and produced convulsions. Again treatment tended to support the former speakers. Saline injections by diluting the poison did good; just as water added to spirit retarded its action, so in the case of eclampsia that proportion of the poison in the blood was diminished in action. Mr. Hastings Tweedy had mentioned the benefit of blood-letting and had called attention to the fact that if subsequent intravenous injection of saline solution were overdone the symptoms would gravely relapse. Here blood-letting, by producing a flow from the tissues into the blood, would carry away some of the poison, which was evidently in loose combination with the tissues, from the cerebral cells and lead to improvement. Subsequent saline injection, if the poison was present in the blood above a certain proportion, would, by producing hydræmic plethora, tend to cause a flow of fluid from the blood into the tissues, which latter, entering into loose combination with the dissolved poison, removed it from the fluid and thus again gave rise to the nervous symptoms afresh. Professor Byers had said that he thought that the fœtus was one of the main factors in the causation of the disease leading up to eclampsia. The speaker was in strong agreement with this and quoted a case tending to support this idea.

Dr. C. E. PUBELOW (Birmingham) said that he had tried the active and the passive treatment of labour in eclampsia. He preferred the active treatment of the eclampsia and the passive treatment of the labour was most satisfactory. He used the saline treatment and found it valuable. He quoted two cases of illegitimate pregnancies in which the pregnancy was the first in each case and both the cases died and he was strongly of the opinion that shame or mental distress was a powerful factor in such cases which were frequent in illegitimate first pregnancies.

Dr. A. SHARP (Nottingham) said that eclampsia was a matter of great interest to the general practitioner. He thought that worry and trouble were two of the causes of the condition, or at least predisposed to it. The morphine treatment was the reverse of what had been hitherto advocated for kidney disease and for this reason its recommendation was a striking fact.

Mr. J. W. DRAPER (Huddersfield) said that certain cases in his practice had to be helped regularly by being delivered under an anæsthetic and he found that on the whole they multiplied.

Dr. HENRY CORBY (Cork) said that with regard to theory the profession was very much in the dark as to the causation of eclampsia. He said that if albuminuria was present in the pregnancy there was more danger of eclampsia in labour. He thought that the quantity and quality of urine as regards waste products were more important than the amount of albumin. He did not like the action of pilocarpine though he had used it. He had tried morphine and did not like it whether pushed or not. He approved of saline injections as they undoubtedly diluted the poison. He thought that the fœtus might be a cause, but not the only cause, of the condition.

Dr. J. FORD ANDERSON (London) said that his practice was that in cases of eclampsia he tried to avoid causing irritation and to remove sources of irritation. He found that chloroform was especially dangerous in eclampsia. He considered nitrite of amyl useful. All sources of mental excitement and worry should be, as far as possible, eliminated from the patient's surroundings both during gestation and labour. He was of opinion that there were many causes of eclampsia and that, although the condition might be due to a poison or poisons, still there were possibly other causes.

The PRESIDENT of the section thought that what was brought out clearly by the discussion was that there was not much known as to the pathology of eclampsia in general. What also was brought out was the gentleness of treatment adopted by those who had had most experience. Morphine was in his opinion useful for the convulsions, but, as Dr. Corby said, it should be used most cautiously as it might cause disaster. He did not approve of vaginal Cæsarean section or Bossi's dilators and condemned dilators generally. He did not find as great benefit from saline injections, bleeding, &c., as some appeared to have found. He thought that pilocarpine in this condition was not a good drug and should not be used.

Dr. BOXALL, in reply, thought that certain cases of eclampsia should be rapidly delivered and in these cases, where matters were urgent, it did not appear that waiting increased the chances of recovery. He thought a stomach tube should be used. He used morphine and found it satisfactory. He did not like mechanical dilators and was glad to find that the opinion of the President of the section and of the majority of the members of the section was in harmony with his own.

Dr. MACLEAN then read a paper entitled

A Case of Elephantiasis of the Vulva.

The case was illustrated by microscopic and ordinary photographs. The history showed the condition to have been present at birth and there was a possible specific taint

in the father who lived for some years amongst the natives of Australia. The patient was single and 19 years of age and stated that whilst within her recollection the vulva had always been enlarged, at and after puberty the enlargement became progressively cumbersome, until latterly the dragging pain which was experienced on assuming the erect attitude had become very distressing and produced an almost complete incapacity for house work. The growth was found to be based in the labia minora and clitoral regions and was removed by amputation with very satisfactory after results. The microscopic nature of the growth was described and was followed by a *résumé* of the English and continental literature as to incidence, etiology, pathological anatomy, and treatment.

Dr. J. INGLIS PARSONS then read a

Further Report on his Operation for Prolapsus Uteri, with Notes of 93 Cases.

He had found it extremely useful for private patients who wished to get rid of wearing pessaries. These people did not object to an operation that was practically bloodless and left no scar and was to all intents free from risk. His operation of injections of quinine into the broad ligament had two advantages over hysteropexy: firstly, the uterus could expand and pregnancy was not interfered with; and secondly, the uterus could be held up when the abdominal wall was too flabby for a ventrofixation. Six of his cases had full-term children without any difficulty subsequently to operation. There was no pain after the operation and no rise of temperature occurred as a rule. He had gradually increased the amount of the solution injected into each broad ligament to one drachm of a solution the strength of which was 100 grains to the ounce, but found it advisable not to go beyond that amount. If its repetition was necessary it should certainly not be done before a fortnight had elapsed. For minor cases of prolapse rest in bed for ten days after the operation was enough if the patient wore a pessary for two months and kept herself recumbent until organisation had taken place. In dealing with chronic cases of procidentia of from 10 to 20 years' duration a proportionately longer time was required in bed, and two injections would in some cases be necessary, with an interval of a fortnight between each injection. The results were very favourable. Of the 93 cases 90 per cent. had procidentia, about 80 per cent. were completely cured of their prolapse, and only one case completely failed. In every case of minor prolapse, where the patients had chronic backache and were obliged to wear a pessary, the operation had succeeded.

Dr. FORBES-ROSS asked Dr. Parsons whether the improvement and cure were lasting and whether there was any tendency to recurrence. He said that it was very satisfactory indeed to find that Dr. Parsons was able to extend his experience of his operation and felt himself justified in repeatedly bringing the apparent marked benefits and advantages to the notice of the profession and congratulated Dr. Parsons on his highly successful percentage of cures.

The PRESIDENT of the section commented favourably on the high percentage of success.

Dr. PARSONS replied and said that cases after eight years showed no tendency to relapse of the pre-existing condition.

Professor BYERS in eulogistic terms moved a cordial vote of thanks to Dr. Herbert Spencer for his able and tactful conduct of the business of the section.—This was seconded by Dr. TAYLOR YOUNG (Sydney, New South Wales) in apposite and happy terms and he asked to be allowed to couple the names of the secretaries of the section, Mr. M. W. Williams and Miss Louisa Garrett Anderson, with the vote, which was carried by acclamation.—The PRESIDENT of the section thanked the members and felicitated Miss Garrett Anderson for the success of her efforts in organising the gynæcological section of the pathological museum. He also thanked Professor Wertheim and Professor Howard Kelly for their help in making the section a success.

OPHTHALMOLOGY.

FRIDAY, JULY 28TH.

Mr. E. TREACHER COLLINS (London) opened a discussion on

Capsular Complications after Cataract Extraction

by reading a comprehensive paper illustrated by lantern slides of microscopic sections. He divided the cases into two groups—namely, (1) those resulting from the adhesion of the capsule to the extraction scar; and (2) those resulting from opacity occurring in connexion with capsular remnants. On the first group he showed by sections of eyes which had been lost that fixity of the capsule in the corneal wound might arise from two causes—namely, (*a*) an entanglement within the lips of the wound; and (*b*) agglutination of the capsule to the back of the wound by inflammatory exudate. He detailed three cases in which the capsule became entangled within the wound and resulted in such serious after-effects that the eyes were lost. In each case there ensued severe serous irido-cyclitis and in two of them sympathetic inflammation was excited in the other eye with such serious symptoms as hæmorrhage into the anterior chamber, keratitis punctata, and hypopyon, with later increase of tension. Paracentesis was performed for the relief of the symptoms and in one case an attempt was made to release the adherent capsule from the wound. Microscopic examination of the scar of the eyes showed the following appearances: a thickening of the sclero-corneal tissue in the vicinity of the wound, due to the spacing out of the layers of fibrous tissue and infiltration of round cells; an elevation of the conjunctiva overlying it, due to a considerable accumulation of round cells beneath the epithelium; a prolongation, in finger-like processes, of the surface epithelium into the scar for some little distance; and a large accumulation of cells between the lips of the wound surrounding the entangled lens capsule. Nearest to the capsule many of these cells were of an epithelioid type. Within the line of the wound a corrugated piece of the anterior lens capsule was fixed at from half to two-thirds of the depth of the wound and the lips of the wound gaped apart, although in one case five months had elapsed since the removal of the cataract. He concluded from the features of the sections (1) that the entangled lens capsule acted as a foreign body and produced about it just that arrangement of cells found around a foreign body, such as an eyelash, implanted within the healthy cornea either accidentally or experimentally; (2) that the presence of the capsule in the wound delayed healing; (3) that the delayed healing increased the liability to infection by micro-organisms from the conjunctiva and therefrom ensued the irido-cyclitis; and (4) that a tendency to irido-cyclitis was predisposed to in these eyes by the constant drag kept up on the ciliary body through the entangled capsule. Either or both ends of a divided capsule might become agglutinated to the posterior surface of the wound or the inflammatory exudate on the posterior surface of the wound might extend between the two lips of the divided anterior capsule and unite the posterior capsule to it. This agglutination did not delay healing but it advanced the position of the lens capsule from that which it occupied normally and consequently advanced the position of the iris. This might be so marked that the root of the iris might be dragged into apposition with the posterior surface of the cornea so as to obstruct filtration and produce glaucoma. The existence of a previous iridectomy did not completely remove this risk. This agglutination of the capsule to the wound was not so serious a matter as the incarceration of the capsule within the wound. In some few cases in eyes with adherent capsule no increase of tension might occur until a subsequent needling operation was performed; this might result from a new and stronger attachment of the capsule which brought forward the root of the iris still further. In other cases the irritation of the ciliary body by the disturbance of the tense capsular remnant just sufficed to block filtration by a new exudate. Even if no seriously untoward effects resulted such eyes not uncommonly remained irritable for some time after interference. Mr. Collins next considered how these risks of capsular complication might be best avoided and what could be done to remedy the condition when found to exist. He believed that the operation of extraction without iridectomy was less liable to be followed by complications of this order (the iris interposed between the cornea and the capsule), yet the risk was not thereby wholly avoided. He had recorded a case where on removal of a lens in its capsule without iridectomy the anterior hyaloid membrane was incarcerated and ultimately caused glaucoma. He next considered the possibility of preventing the complication by taking special precautions in opening the capsule before the liberation of the lens. Capsulotomy by forceps seemed to afford the best protective as compared with capsulotomy by needling. It made sure of the removal of the loose central capsular remnant but did not eliminate risks of peripheral portions becoming entangled.

He then considered the possibility of replacing such displaced fragments during the performance of the final stages of the extraction, either by the careful use of the repositor or by Swanzy's method which had been described in these terms: "A bent iris forceps is passed open between the lips of the wound, closed, and gently withdrawn; if capsular tags are seised upon they are snipped off with scissors; and the procedure is repeated as the case may indicate." Swanzy estimated that capsular tags were present in 25 per cent. of the cases. Mr. Collins preferred the use of the repositor for the remnants were so transparent that there was no certainty of dealing effectually with them when their withdrawal was attempted, but there was a reasonable possibility of replacing them within the anterior chamber by careful use of the repositor. For the relief of untoward conditions arising from these complications he had tried sclerotomy, paracentesis, and needlings without success. Sections of eyes so operated upon had been examined; these demonstrated that the mischief arose from a blocked filtration angle, a state which such measures did not relieve. A second iridectomy would effect this but it had the drawback of producing large and ungainly colobomata. In two cases he had dealt with the complication by cutting free the adherent capsule after the manner recommended by Lang for the division of anterior synechiæ of the iris, using Knapp's discission knife, and in both cases tension had been permanently reduced. On the second group—namely, complications arising from opacities appearing in the lens capsule—Mr. Collins demonstrated by lantern slides that these arose from (*a*) retained lens substance; (*b*) wrinkling of the anterior capsule and the new growth of cells lining it; or (*c*) adventitious fibrous tissue. In the first of these cases he showed that retained lens fragments might be shut in by the retraction of the anterior capsule which protected them from solution by the aqueous; if these remnants remained in the pupillary area they seriously diminished vision and ultimately became calcareous. Secondly, the hyaline capsule shrunk and so thickened when freed from its normally stretched condition. Should the thickening be unequal a wrinkling was produced which tended to break up the rays of light entering the eye and so reduced vision. Thirdly, adventitious fibrous tissue might form after extraction of cataract as the result of cell exudation in iritis, either on the front of the anterior capsule, between the anterior and posterior capsule, or behind the posterior capsule about the hyaloid membrane of the vitreous as the result of cyclitis. Even a blood clot on the anterior capsule might form a matrix in which fibrous tissue would develop. In severe cases of irido-cyclitis all the dangers were greatly enhanced and dense fibrous tissue might be formed so as to separate completely the anterior and posterior chambers of the eye. All these dangers were considerably reduced by the performance of capsulotomy by forceps. The method seemed to have originated with Förster. Mr. John Couper employed it extensively for many years at Moorfields and it was when acting as his house surgeon that Mr. Collins received his first impressions of the value of the method. By examining the records of his own cases of extraction he found the following results were obtained. Of 100 cases operated on in 1899 by the cystotome 47 required one needling and seven a second needling of the after cataract; of all 3 per cent. obtained ⅔ vision without needling. In the next 100 cases capsulotomy forceps were used; only 15 required subsequent needling; none required a repetition of the needling; and of all 20 per cent. obtained ⅔ vision without needling. In a second 100 cases with forceps only four required subsequent needling and none required a second needling, though two years had elapsed since the last of these was operated on; and of all these 25 per cent. obtained ⅔ vision without needling. In conclusion he expressed a doubt whether by any other procedure for the removal of cataract full vision could be obtained in 25 per cent. of the cases with only one operation.

Mr. G. A. BERRY (Edinburgh), the President of the section, agreed with Mr. Collins's opinion that the careful use of the repositor gave better results than when remnants were forcibly removed by forceps. The serious danger of ingress of micro-organisms following delay of healing of the wound could, he found, be avoided by the provision of conjunctival flaps. In case of threatening glaucoma, in the worst of these cases he preferred an iridectomy at the quadrant opposite to that of the original incision to any other procedure.

Dr. A. BRONNER (Bradford) remarked on the additional danger of such complications to gouty subjects. He believed that an irido-cyclitis of obscure order was associated with undoubted general gouty manifestations. Capsulotomy forceps he did not like owing to the danger of dislocating the lens; he found that the operation was longer and in case of a restless patient the risks were greater. He had compared the results of extraction without iridectomy and those where iridectomy was performed as they were affected by capsular complications and he concluded that there was a fair balance of risks.

Dr. TATHAM THOMPSON (Cardiff) said that in his early practice he followed the usage of his preceptor Dr. Argyle Robinson who was a keen advocate of free laceration with the cystotome. He had later used the forceps but considered the balance of risks in favour of the cystotome. Recently he had practised washing out the anterior chamber after the mode advocated by M'Keown and thought it had considerable advantage.

Dr. CYRIL H. WALKER (Bristol) emphasised the importance of the provision of conjunctival flaps which prevented leakage and risks of infection. He thought there was a liability to blocking the wound during the course of the operation when a large piece of capsule was removed by forceps and he therefore preferred the cystotome.

Dr. J. HERN (Darlington) said that he preferred free opening of the anterior capsule by the cystotome with which he made a central circular incision. He believed that such an incision could be made with less risk than attended the use of the forceps. In his experience of several thousand cases he had only had two or three cases of secondary glaucoma arising from capsular complications.

Colonel H. E. DRAKE-BROCKMAN, I.M.S. (London), said that he preferred to lacerate the capsule by three incisions so that a triangular central portion was detached. He had practised the method on a great number of cases in India with the best results.

Mr. J. HERBERT PARSONS (London), referring to the anatomical side of Mr. Collins's paper, confirmed the observations on the effects of the retention of capsular remnants in the corneal wound, both in delaying healing and in producing the irritating effects of a foreign body, with resulting bulky scar tissue of poor and spongy quality. He thought that very many cases in which there were capsular inclusions did quite well but why others should do so badly he could not say. Theoretically the capsulotomy forceps was the best instrument, for by it a large portion of capsule-bearing lens epithelium could be removed, and it was this epithelium that was mainly responsible for after cataract.

Dr. R. W. W. HENRY (Leicester) contrasted the reactions subsequently to the use of forceps and needle. Doubtless the use of forceps was theoretically the more correct but he found that it excited a considerable reaction, as did also the free laceration of the capsule in circular or triangular incisions with needles.

Mr. C. DEVEREUX MARSHALL (London) commented on the infrequency with which Mr. Collins had had recourse to needling of after cataract when the forceps was employed in the original operation. He thought that the immediate effect might be good but that needling was necessary even though at a later stage, for it was not the anterior capsule which alone caused trouble. He advocated the simple procedure of opening the capsule with the knife whilst the corneal incision was being made.

Mr. E. C. GREEN (Derby) spoke in favour of extraction without iridectomy but with subsequent instillation of eserine as reducing capsular complications to a minimum.

Mr. COLLINS then replied, after which the proceedings closed with a vote of thanks to the President of the section.

PATHOLOGY.

THURSDAY, JULY 27TH.

The proceedings were opened by Dr. F. W. FORBES ROSS (London) who communicated a paper entitled

Observations on Certain Features exhibited by Cells in their Relation to Cancer.

In the course of an investigation into the pathological histology of cancer, accompanied by simultaneous parallel observations on normal tissues, the following points were impressed on him: (1) that the genesis of cancer appeared to be a question of cell polarity; (2) that the variations of the polarity of epithelial cells were important factors in cancer genesis and that the first, or one of the first, changes in cells about to become cancergenetic or gametoid, was a

variation of their polarity, alteration of their planes and mode of division, modified or deranged neural control with retrograde developmental phenomena and the consequent occurrence of precancerous changes—e.g., heaping up of epithelial cells in gland acini and the formation of cell nests in stratified epithelium; (3) that owing to the fixity of the polar axes of some cells they could not take part in cancer genesis until they had become changed as to structure, polar axis and method of nerve supply and control; and further, that if their polar axes again became fixed then these cells ceased to participate in cancer formation—e.g., ciliated and goblet cells; (4) that the foregoing observations, assuming them to be accurate, strongly supported the theory of the nervous origin of cancer—that cancer was nothing but a cellular dystrophy leading to irregular disturbances of biological function resulting in gametoid change; and (5) that the multiple nuclei of cancer cells were as often the result of the extrusion of nucleoli from nuclei as of multiple and heterotype mitosis; this method of multiplication, too, accounted for the presence of the hypochromatic nucleus of cancer cells. Dr. Forbes-Ross then proceeded to define cell polarity in some detail from both its morphological and physiological aspects and concluded that both agreed in that the axes of cell polarity were usually at right angles to the surface on which the cells were growing. The polar axes of the non-epithelial mesoblastic cell appeared to be fixed (striped and non-striped muscle cell), lost (leucocytes and plasma cells), or occasionally various. The centrosome was next discussed as to its relation to cell axes and cell division; its relation to ciliated and goblet cells; and its position in various cells, including those whose tracts were not usually the seat of primary carcinoma. He then went on to discuss the fixity of polarity of ciliated cells, their centrosomal relations and their peculiar nervous control and functions, the peculiar manner of growth in those few cancers recorded where ciliated cells had been found and the benign formation they gave rise to in cancers in which they existed. He further remarked upon the common absence of ciliated cells in cancers occurring in ciliated tracts. Passing next to the goblet cell of the intestine, its similarity in structure and behaviour under like conditions to the ciliated cells was noted and commented upon, and the statement was made that goblet and ciliated cells both mutate or change into cells of lower organisation and different nervous control. Other epithelial cells, it was shown, although resembling those already described so far as related to the direction of their polar axes and the position of their centrosomes, differed with regard to their nervous control and growth. He then described cancers in which ciliated cells had been found and suggested the possibility of accidental inclusion as an adequate explanation. After discussing the various differences of mitosis—heterotype, homotype, and other irregularities—and referring to Cheatle's work on nerve areas in cancer Dr. Forbes-Ross compared Farmer, Walker, and Moore's vesicular cap with Plimmer's bodies, and concluded by contrasting the relations of epiblastic, hypoblastic, and mesoblastic cells from the point of view of cell polarity in tumour formation, benign and malignant.

Dr. F. W. MOTT (London), the President of the section, then called upon Dr. HAMILTON WRIGHT for his paper on

The Etiology and Pathology of Beri-beri.

Although beri-beri had been known from time immemorial very little exact knowledge was available until quite recent times when Baeltz, Winkler, and others had shown that its chief phenomenon—sensori-motor paralysis—was due to a lesion of the peripheral terminations of sensory and motor nerves and the fatal termination generally resulted from cardiac failure, the vagus terminations in the heart exhibiting a special affinity for beri-beri poison. Dr. Wright now offered for discussion the results of five years' investigation of the disease undertaken at the instance of the Colonial Office. According to him the incubation period of the disease was short—from 7 to 18 or 20 days. The invasion was abrupt and obvious in the severe rapidly fatal cases but more or less insidious in the milder ones and usually manifested itself by symptoms that closely resembled, and were often diagnosed as, those of acute indigestion. Within a short time—from 5 to 72 hours—nervous symptoms appeared, the knee-jerks were lost, and the peroneal and anterior tibial muscles were weakened and became flaccid; the paresis in turn affected practically all the muscles of the extremities and the sensory disturbance was co-extensive with the motor paresis. Œdema was present but varied in degree. The nervous mechanism of the circulatory system was early involved, commencing with cardiac irritability, palpitation, venous engorgement and hæmic murmurs, passing on to cardiac exhaustion, dyspnœa and death. Pyrexia was absent throughout the course of uncomplicated cases of the disease. The striking feature post mortem was the appearance presented by the pyloric end of the stomach and the duodenum. The mucosa in these situations was congested and spotted with fine punctiform hæmorrhagic injections which formed rings or patches and occurred at short intervals extending sometimes as low as the cæcum and occasionally leading to hæmorrhagic erosion; whilst the crests of the valvulæ conniventes exhibited small discrete punctiform hæmorrhages. Microscopically the affected parts of the gastro-duodenal walls exhibited the main features of an acute inflammatory process—active congestion, small-celled infiltration of the mucosa and submucosa, cloudy degeneration, and marked necrosis of the epithelium. In the necrotic mucosa might be observed a large bacillus with slightly rounded ends from 4 to 9μ long by 1 to 1·5μ broad and Dr. Wright regarded this gastro-duodenitis as the primary lesion of the disease and consequently considered the presence of the bacillus in the affected mucosa as particularly significant. He then described in detail that class of case which, after partially clearing up, progressed to a true atrophic degeneration which, migrating centralwards, gave rise to various residual sensori-motor and autonomic paralyses to which he had given the general name of Beri-beric Residual Paralysis. These cases might live from a few months to 20 years, death being due eventually to cardiac exhaustion or more commonly to some intercurrent disease. Post mortem gastro-duodenitis was absent but these cases exhibited well-marked chronic Wallerian degeneration of the affected nerves. Commenting on the cases he had studied Dr. Wright proposed to classify the disease clinically under the headings acute pernicious beri-beri, acute beri-beri, subacute beri-beri, and beri-beric residual paralysis. And in conclusion he propounded as a working theory that beri-beri was an acute or subacute infectious disease of short incubation period, due to a specific micro-organism not yet isolated, probably ingested with the food but not especially infesting any particular food. This organism multiplied chiefly in the mucosa of the pylorus and duodenum and elaborated there an extracellular toxin which was immediately absorbed and poisoned, first, the peripheral terminations of the vagi to the stomach and heart and then other afferent, efferent, and autonomic neurons.

The PRESIDENT of the section then called upon the secretary to read a communication from Dr. C. HOSE (Borneo) entitled

A Contribution to the Discussion on the Etiology of Beri-beri,

in which it was pointed out that the factor of diet could not be ignored and reference was made to a paper published in 1901 by the writer suggesting that the consumption of imported mouldy rice was the principal cause of beri-beri and that the microscopical fungoid growth associated with such rice might bear a causal relationship to the disease. He also referred to the recovery of 33 out of a batch of 39 male Dyaks who, after contracting beri-beri during an expedition in the jungle where they had been living on mouldy rice, were placed in villages where none but freshly husked rice was used and contrasted this result with that observed in another instance where 120 Dyaks, who had contracted the disease in similar circumstances and who continued to live on imported rice after their return to the coast, lost 47 of their number. Again, two out of three monkeys fed on mouldy rice developed the characteristic nervous symptoms of beri-beri although œdema of the legs was absent. Weakness and paralytic symptoms were also produced in similarly treated fowls. Statistics from the half-yearly report, dated January, 1905, of the superintendent of police and prisons of Sarawak were quoted to show the reduction in the incidence of the disease following the substitution of fresh rice for the imported grain. It was also stated that the experiments upon apes and fowls previously referred to had been repeated by workers in the University of Tokio with confirmatory results. Dr. Hose, whilst insisting on the importance of the diet factor, was not prepared to deny the existence of a specific bacillus, possibly the one described by Dr. Wright. Finally, Dr. Hose attached some importance to such points as the constant presence of an unnamed beetle in the mouldy rice, the variations in the resistance to the

attacks of mould and the beetle exhibited by rice from different countries, and the association of the mould with articles of food other than rice—such as maize, sago, dried fish, &c.

After a short discussion, in which the PRESIDENT of the section, Dr. T. SHENNAN (Edinburgh), Dr. G. T. CLARKE, and Major G. H. FINK, I.M.S., took part, Dr. HAMILTON WRIGHT briefly responded.

Dr. W. PAGE MAY (London) gave a lantern demonstration of a remarkable series of sections of the brain and spinal cord of

A Case of Microgyria or Cerebral Hemiatrophy.

The right side of the brain was less than two-thirds of the size of the left and its convolutions, though not simpler in form, were less than half as rich in grey and white matter. On the affected side the large motor and pyramidal cells were absent or markedly degenerated, whilst the pyramidal layer and the inner line of Baillarger were notably diminished in size. There were similar degenerative and atrophic changes in the parietal and frontal regions and to a lesser extent in the occipital. The basal ganglia on the affected side were much wasted and also the pyramidal tract and fillet. The opposite (right) lobe of the cerebellum was wasted and the cells of Purkinje were absent or degenerated. Marked atrophy in the nucleus dentatus and in the superior cerebellar peduncle was also a striking feature of the condition, and whilst the tangential fibres in the cerebrum and cerebellum were slightly affected the large associational tracts were normal. In the spinal cord marked degeneration in the anterior horn cells was associated with degeneration in the affected pyramidal tract and in the antero-lateral column.

Dr. R. CATTLEY (Leeds) and Dr. A. S. F. GRÜNBAUM (Leeds) then communicated their observations

On the Mitoses in the Cells of the Graafian Follicle.

They stated that some of the mitoses found in the Graafian follicle of the rabbit's ovary bore a strong semblance to heterotype division; so much so that one of them at first thought some of the divisions were of that type. Further investigation had not confirmed this opinion. The ovaries examined included those of the human female, of the chimpanzee, and of the rhesus monkey, as well as of other mammals. So far as they were aware no previous records existed concerning the mitoses in the Graafian follicles of the three first named. The best preservation was obtained with "weak" Hermann's fluid—viz., the ordinary formula with half the quantity of osmic acid—and iron hæmatoxylin was the stain most frequently used. Many other methods of preservation and staining were tried. The appearances in the rabbit were peculiar and, as could be seen from the lantern slides, more difficult to interpret than in other mammals, although in these also shortness and thickness of the chromosomes occasionally made it difficult to say that a particular mitosis was not heterotype. But although these particular mitoses, all in metaphase, bore some resemblance to such forms, yet the absence of any heterotype prophase in all the numerous sections examined made it extremely probable that there were only somatic mitoses present. Moreover, there appeared to be no reduction to one-half the ordinary number of chromosomes. The absence of heterotype divisions in other animals made it unlikely that the forms seen in the rabbits were really of that nature. Even in the rabbit's ovary there were numerous mitoses obviously of the somatic type and it would be contrary to all experience for the majority to be heterotype; and since their existence would have supported certain views as to the embryological origin of the cells of the Graafian follicle it seemed to Dr. Cattley and Dr. Grünbaum of some importance to establish the negative proposition that heterotype divisions did not occur there.

Dr. F. G. BUSHNELL (Brighton) and Dr. F. HINDS (Worthing) then demonstrated a series of wet preparations illustrating Some Aspects of Carcinoma Ventriculi: its Variations in Malignancy, and Dr. BUSHNELL further demonstrated a specimen of Red Degeneration—so-called Necrobiosis—of a Fibroma of the Uterus which had been removed and lent by Mr. T. H. Ionides, surgeon to the Sussex County Hospital.

FRIDAY, JULY 28TH.

Dr. SHENNAN, who occupied the President's chair, opened the proceedings by calling upon Major FINK who read a paper entitled

Cancer and Pre-cancerous Changes: their Origin and Treatment,

in which he contended that cancer was due to a parasite, most probably a fungoid growth or mycetozoon, basing his arguments on analogy with "kohlhernie," a disease of the cabbage plant which was investigated a few years ago by Woronin and Eidam and stated to be due to one of the myxomycetes termed by its discoverers plasmodiophora brassicæ.

In reply to a question by Dr. MOTT, Major FINK said that he had no specimens illustrating the subject of his paper to submit to the meeting.

Sir JAMES GRANT (Canada) spoke at some length on the value of the results now being obtained by workers in the field of cancer research, particularly those associated with the Imperial Cancer Research Fund and expressed the hope that the time was at hand when the results obtained by research workers would justify the opening of an active campaign directed against the dread disease. Passing to the economic value of abstract science to the State, Sir James Grant enlarged upon the freedom of the Japanese troops from such diseases as dysentery and typhoid fever, due, in the opinion of the speaker, to the fact that a highly trained staff of bacteriologists preceded the army and advised as to the localities to be chosen for camps, &c.

In the absence from England of the author, one of the secretaries read a paper by Lieutenant-Colonel C. BIRT, R.A.M.C., entitled

The Caffeine Enrichment Method.

The pronouncements of Roth in 1903 regarding the selective action of caffeine upon bacilli of the colon and typhoid groups raised the hope that a medium had been found which would encourage the growth of the bacillus typhosus at the expense of the bacillus coli, for Roth stated that the former thrived upon agar which contained 0·6 per cent. caffeine (trimethylxanthin), but that the latter was entirely suppressed. A year later Roth admitted that the caffeinated agar did not fulfil all requirements and he advocated preliminary incubation—i.e., enrichment—of the suspected material in broth faintly alkaline to phenolphthalein and containing from 0·8 to 1 per cent. caffeine and claimed to have obtained constant results with diverse races of colon and typhoid bacilli. Other workers—Hoffmann and Ficker, Reitsch, Courmont and Lacomme, and others—attempting to repeat Roth's observations, recorded very conflicting results; the last-named observers, however, recorded a very striking peculiarity of the bacillus typhosus, as they found that cultivations of this organism obtained from a patient's urine thrived in caffeine broth whilst those isolated from the blood died, and Horrocks noted similar behaviour on the part of the micrococcus Melitensis from urine and the spleen when inoculated into this medium. Lieutenant-Colonel Birt therefore experimented with 31 varieties of Eberth's bacillus—all typical in their morphological and cultural characters and in their serum reactions. After five days' incubation at 37° C. the tubes containing 26 out of the 31 strains were sterile and on repeating the experiment a like result was noted at the end of three days; five races grew freely in the 0·5 per cent. caffeine peptone water. Fæces from five enteric fever patients were inoculated into the caffeine broth, incubated at 37° C. for six hours, then plated on Drigalski and Conradi's agar, but no typhoid bacilli could be isolated. Negative results were also obtained in the examination of suspected water-supplies; control experiments where water was experimentally infected with the bacillus typhosus also failed. Lieutenant-Colonel Birt also studied the effect of caffeine on the growth of 18 strains of bacillus dysenteriæ, all identical with Shiga's bacillus and found that none would grow in this medium; nor could the bacillus be recovered from the fæces of dysentery patients by this method, although the colon bacillus could usually grow through. Streptococci (both from the intestine and from pus), staphylococci, bacillus proteus (from the human intestine), bacillus pyocyaneus, and bacillus paratyphosus, type B, all thrived in the medium. Lieutenant Colonel Birt concluded by stating that 0·5 per cent. caffeine in 1 per cent. peptone water did not always restrain the development of the bacillus coli, whilst 26 out of 31 strains of the bacillus typhosus and all (18) strains of the bacillus dysenteriæ were completely inhibited; therefore negative results could not be relied upon to exclude

these organisms from dejecta or water. Caffeinated media were of service in isolating streptococci and staphylococci.

Dr. J. W. H. EYRE (London) said that the experiments which he had already carried out with caffeinated media and others that he now had in progress fully confirmed Lieutenant-Colonel Birt's results. He considered that the paper was a valuable one as it sounded an urgently needed note of warning to those workers who even now reposed confidence in caffeinated media.

Dr. BERTRAM ABRAHAMS (London) showed an extremely interesting series of lantern slides illustrating the

Morbid Anatomy and Histology of Various Forms of Acute and Chronic Diseases of Joints.

Skiagrams, photomicrograms, and photograms were exhibited from cases of rheumatism, acute and chronic arthritis deformans, gonorrhœal arthritis, infective arthritis, Charcot's joint, gout, and Still's disease. It was pointed out that in all instances in which an acute or subacute infective origin could be postulated the only change to be noted in the bones was a marked thinning of the epiphysial ends. There was never any trace of overgrowth or the formation of osteophytes. It was suggested that the difference between the acute and chronic varieties of arthritis deformans was dependent upon the length of time during which the patient was exposed to the influence of an intoxication and stress was laid upon the importance of the indications for treatment which might be derived from a careful pathological and skiagraphical study of individual cases.

Dr. MOTT, Dr. A. W. GILCHRIST (Nice), and Dr. SHENNAN took part in a short discussion on the subject of this demonstration.

Dr. EYRE and Dr. J. F. FLASHMAN (Sydney, New South Wales) communicated a paper on

Diphtheroid Organisms in the Throats of the Insane.

They briefly recapitulated the work of Dr. Ford Robertson whose results suggested the probability that general paralysis of the insane was caused by the invasion of the body, already weakened by syphilis, by some member of the diphtheria group of bacilli—possibly the Klebs-Löffler bacillus itself—and further that it was this organism or its toxin that gave the paralytic aspect to the disease; and they explained that their investigation into the occurrence of diphtheroid organisms in the throats of general paralytics and patients with other forms of insanity at Claybury and Colney Hatch asylums was undertaken with a view to determine the stability of his premisses. By carefully analysing recent literature dealing with the incidence of the bacillus diphtheriæ in the throats of the presumably healthy and normal individual on the one hand and of diphtheria "contacts" on the other, average figures were obtained which served as a basis for comparison. They then proceeded to examine in detail the material from the throats of 60 cases of general paralysis of the insane and of 76 cases representing other forms of insanity; and material derived post mortem from the throat, pharynx, bronchi, cerebro-spinal fluid, heart blood, bile, and scrapings from various portions of the intestinal mucosa of ten cases of general paralysis and 26 cases representing other forms of insanity. Whenever a bacillus resembling the bacillus diphtheriæ was noted in any of these situations the organism was isolated and thoroughly studied, its identity established, and its virulence tested. Incidentally the value of Neisser's stain in the differentiation of Klebs-Löffler bacillus was discussed and they expressed their opinion that Neisser's so-called differential stain afforded no information beyond that given more easily and more conclusively by a simple carbolic methylene-blue stain. They summed up their results by stating the percentage incidence of all "diphtheroid" organisms in the throats of the insane as 17·3 per cent., a figure not in excess of that noted (18·5 per cent.) in the same population outside the walls of an asylum. The percentage incidence of genuine bacillus diphtheriæ at 5·07 per cent. in the throats of the insane (a large proportion of the diphtheroid organisms noted were common saprophytic members of the diphtheria group of bacilli) compared well with 6·9 per cent. in the healthy sane. Dealing more particularly with general paralytics they were unable to satisfy themselves that the bacillus diphtheriæ was more common in their throats (5 per cent.) than in the throats of cases of other forms of insanity (5·1 per cent.), whilst the majority of the strains isolated were of low virulence and slight toxicity and so compared in these respects with the types found in the throats of the healthy sane. The number of cases (10) of general paralysis studied post mortem was too small to permit of trustworthy deductions but it was significant that the bacillus diphtheriæ was not met with in any. As the result of their work they were unable to trace any causal connexion between the bacillus diphtheriæ and general paralysis of the insane.

Dr. MOTT and Dr. SHENNAN took part in the discussion that followed.

One of the secretaries then read a paper by Dr. CECIL PRICE JONES (London) entitled

The Influence of Certain Micro-organisms on the Cellular Constituents of the Red Bone Marrow,

in which he described his researches in this connexion. The procedure adopted comprised—(1) the examination of bone marrow obtained from a number of presumably healthy rabbits and guinea-pigs; (2) the examination of bone marrow obtained from a number of these animals that had died from the effects resulting from the inoculation of cultures of different micro organisms, the rabbits being inoculated with the diplococcus pneumoniæ and the guinea-pigs with the micrococcus Melitensis; (3) the estimation of the watery content of the bone marrow obtained from these healthy and infected animals; and (4) the comparison of the above results with those obtained from the examination of bone marrow obtained from children who had died from various causes, including pneumococcic septicæmia, broncho-pneumonia, epidemic diarrhœa, &c. Dr. Jones referred to a note previously published[1] in which the technique and the classification which he employed were detailed but he advocated for the present purpose a more general classification of the cell elements of the marrow into *non-granular* or lymphoid cells, *granular* or leucocytic cells, and *nucleated red cells*, these last being expressed in percentages of the total number of the white cells counted in each case. A series of examinations of bone marrow from 11 healthy rabbits gave an average percentage differential count of 51·3 per cent. lymphoid cells, 48·4 per cent. granular cells, and 11·7 per cent. of nucleated red cells. A similar series from five healthy guinea-pigs gave an average of 43·3 per cent. lymphoid cells, 56·2 per cent. granular cells, and 8·04 per cent. of nucleated red cells. An example of healthy human marrow obtained from a man who was killed in a carriage accident gave a percentage cellular composition of 50·4 per cent. lymphoid cells, 49·5 per cent. granular cells, and 8·2 per cent. of nucleated red cells. A series of examinations of marrow from 13 rabbits that were inoculated intraperitoneally with the pneumococcus, and with three exceptions died within 24 hours of infection, showed a marked lympho-erythroblastic type of marrow, giving an average percentage cellular composition of 61·4 per cent. lymphoid cells, 38·1 per cent. granular cells, and 35·0 per cent. of nucleated red cells; whereas a series of five rabbits inoculated subcutaneously with the pneumococcus, and surviving infection at least three days, showed a leucoblastic type of marrow, giving an average count of 34·3 per cent. lymphoid cells, 65·4 per cent. of granular cells, and 15·0 per cent. of nucleated red cells. A series of examinations of marrow from five guinea-pigs inoculated subdurally with the micrococcus Melitensis showed a lympho erythroblastic type of marrow and gave an average percentage cellular composition of 61·1 per cent. lymphoid cells, 38·4 per cent. granular cells, and 18·3 per cent. of nucleated red cells. A series of examinations of marrow from eight children who died from pneumococcic infection showed a pronounced leucoblastic type of marrow, with average percentage counts of 32·17 per cent. lymphoid cells, 67·75 per cent. granular cells, and 6·1 per cent. of nucleated red cells, the type being especially strongly marked in two cases in which empyema was present. Another series from five children who had died from dysenteric diarrhœa presented a marrow that differed only slightly from the healthy type, giving average percentages of 45·4 per cent. lymphoid cells, 54·5 per cent. granular cells, and 10 per cent. of nucleated red cells. Dr. Jones concluded, first, that infection by different micro-organisms resulted in the production of different types of bone marrow dependent not only on the virulence but also on the specificity of the organism; and secondly, that apparently a lymphoblastic marrow was usually accompanied by an increased production of erythroblasts, but that, on the other hand, a leucoblastic marrow was not associated with increased erythroblastic production.

[1] Brit. Med. Jour.

Dr. P. J. CAMMIDGE (London) read a communication on

Observations on the Fæces in Biliary Obstruction and Pancreatic Disease,

first describing the methods he adopted for the examination of the fæces. After noting the naked-eye and microscopical characters of the specimen and the reaction to litmus the nitrogen was determined by Kjeldahl's method, the fat was estimated by a modification of the Schmidt-Stokes method for estimating milk fat, which was described in detail, and finally a rough colour estimation of the amount of stercobilin was made. Dr. Cammidge then summarised the results obtained in the examination of the stools from 53 cases of biliary obstruction and pancreatic disease, grouping his cases under five headings—viz., (1) stone in the first or second part of the common duct, eight cases; (2) stone in the third or fourth part of the common duct, nine cases; (3) chronic pancreatitis, 21 cases; (4) cancer of the pancreas, 13 cases; and (5) pancreatic diabetes, two cases. In colour the stools varied from white to a practically normal tint; but in all except the cases of cancer of the pancreas stercobilin was present and yielded a marked reaction; the reaction in all but those in which there was obstruction high up in the common duct was acid; muscle fibres were detected microscopically in all but cases of pancreatic diabetes; the percentage of total fat in the fæces showed wide variations, even in the same groups of cases, but was usually in excess of normal. Comparison of the percentages of neutral fat and fatty acids in the various groups of cases showed that when obstruction high up in the common duct seriously interfered with the entry of bile into the intestine the fatty acids showed an excess over the neutral fats; in all other lesions the neutral fats were in excess.

Dr. A. F. DIMMOCK (Harrogate) and Mr. F. W. BRANSON (Leeds) then demonstrated

A Rapid and Simple Process for the Estimation of Uric Acid

The method consisted in the precipitation of the uric acid from a slightly alkaline solution as urate of ammonium and subsequently measuring the precipitate in a glass tube which was narrowed at one end and graduated experimentally. 100 cubic centimetres of urine were placed in a conical flask (Erlenmeyer) of about 250 cubic centimetres capacity; one gramme of lithium carbonate was added and the whole was boiled for three minutes. By this means practically the whole of the phosphates were precipitated as phosphate of lithium and free carbonic acid was eliminated. The liquid was filtered whilst hot to remove precipitated earthy salts, &c., and the filter was washed with distilled water until the filtrate measured 100 cubic centimetres; the filtrate containing the uric acid as lithium urate was then cooled down to 60° F. 50 cubic centimetres of the filtrate were transferred to a flask and five grammes of ammonium chloride were added and the flask was shaken until the salt was dissolved. After standing for three minutes the contents of the flask were warmed to 120° F. to secure a uniform aggregation of the precipitated urate of ammonium and the turbid mixture was now poured into a tube graduated in parts per 100 of uric acid and deposition was allowed to take place, the reading being taken after four hours had elapsed.

DENTAL SURGERY.

FRIDAY, JULY 28TH.

Mr. J. F. COLYER (London) read a paper on

Dental Diseases in Horses.

Mr. Colyer said that he had examined some 500 skulls of horses which had died in London. In 66 cases dental caries was present, in some instances slight and in others causing extensive destruction, as many as ten teeth being affected. The clinical and pathological conditions differed from those seen in the human teeth from the difference in structure, the greater part of the carious dentine being worn away in mastication. Caries was more common in the maxillary than in the mandibular teeth; only three cases of caries were seen in the lower jaw. Although caries was more common in old than in young horses cases did occur in quite young ones. Capping, unequal attrition, and sometimes one tooth worn almost away were also frequently observed. The appearances generally suggested that the food of the horse had in its composition some ingredients which appeared to cause caries. Peridental disease was common in horses; 166 specimens showed more or less injury to the peridental membrane ranging from slight injuries to the most aggravated form of bone infection, together with occasional infection of the antrum. In these cases the breath of the animal was extremely offensive. When extra molars were present with mal-occlusion peridental disease was marked in their neighbourhood. The peridental disease in the horse appeared to be local in origin and to be due to hard bodies in the diet becoming lodged in the gum or between the gum and the tooth. A consideration of the peridental disease in horses would appear to suggest that the same disease in man was of more local origin than was generally supposed.

Mr. P. SIDNEY SPOKES (London) communicated a paper on

The Teeth as a Test of Age: a Note on Eruption.

He said that it was recently pointed out in THE LANCET that there were numerous practical occasions when the age, usually of a minor, was of forensic interest. The fact might be required for registration purposes (marriage, census returns, or death); for exemption from attendance at school, and under the Employment of Children Act, 1893; for Indictments under the Criminal Law Amendments Act, 1885, and the Prevention of Cruelty to Children Act, 1904; for superannuation; and notably in the application of the legal presumptions that a child of less than seven years of age was incapable of committing an indictable offence and could only be punished if under 14 years of age on proof of actual malice. English statutes usually imposed the onus of proof upon the defendant; at the common law in cases of dispute infancy was presumed. Certificates of birth, baptismal registers, and, as with a case in 1808, the receipted entry in an accoucheur's day-book, had all been produced and admitted as valid evidence. There were, however, cases where documentary evidence was not forthcoming; the age of these persons must be presumed. Recent Acts had adopted the principle of facial diagnosis: "Where a child is ..... alleged ..... to be under any specified age and the child appears to the court to be under that age, such child shall, for the purposes of this Act, be deemed to be under that age unless the contrary is proved." The state of dentition might assist and this, Mr. Spokes thought, was the most that they could say. The late Sir Edwin Saunders, in the hope that he might assist in the prevention of the employment of young children in factories, examined the mouths of several hundred children of known ages and was of opinion that from their great uniformity of configuration, size, and arrangement the teeth possessed characters more definite and constant than any other parts. Their physiological history was consequently more precise and subject to less variation than that of any other organ. His examination of 227 boys, aged 13 years, showed that 25 per cent. of the second permanent molars were absent. In 111 girls 14 per cent. were absent. But he seemed to have adopted the principle of assuming the presence of the fourth when the other three were fully erupted and thought that of the 338 children, 13 years of age, no less than 294 might have been pronounced with confidence to be of that age from the inspection of their teeth. In 49 boys between 12 and 13 years of age, 16 (32 per cent.) had all four second permanent molars erupted; five (10 per cent.) had all four absent. These boys should have accounted for 196 second molars; 32 per cent. of these were fully erupted, 38 per cent. were erupting, and 28 per cent. were absent. Of the latter 34 were missing from the maxilla and 22 from the mandible. Taking, then, the erupted and the erupting together, 71 per cent. of the second permanent molars were visible in the mouths of those boys who had not completed their thirteenth year. In 638 boys between the years of 13 and 14 the percentage of those with all four second molars properly erupted rose to 62, but 4 per cent. had all four absent, 5 per cent. had three absent, 7 per cent. had two absent, and 7 per cent. had one absent. Of the teeth themselves, 62 per cent. were present, 23 per cent. were in process of eruption (making 85 per cent. visible in the mouth), and 14 per cent. were absent. Of 492 boys between 14 and 15 years 404, or 82 per cent., had all the four second molars in place. Only 2 per cent. had all four absent, 2 per cent. had three absent, 3 per cent. had two absent, and 7 per cent. had one absent. 10 per cent. of the teeth were in the eruptive stage, making 92 per cent. visible in the mouth, and 7 per cent. were still absent. The examination of boys over 15 years of age showed that in some cases second molars were absent and others only just showing. In some others the third molar or wisdom tooth was visible. Mr. Spokes

said that he was afraid he could not hope to make the enumeration of these figures very interesting but every care was taken to insure accuracy. They must speak for themselves, but he thought they must confess that they were unable to rely entirely upon the teeth as a test of age. In some cases they could say affirmatively that the individual had in all probability reached a certain age. They could not so certainly say negatively that he had not attained a stated age. Certain other conditions of the denture might possibly have to be considered, as, for instance, the previous extraction of the first permanent molar which favoured the earlier eruption of the second molar. Of the missing molars 339 were from the maxilla and 239 from the mandible. With regard to the other permanent teeth, 12 per cent. of canines were absent in those under 13 years of age, 3 per cent. of those under 14, and 1 per cent. in those under 15. Here, again, a large proportion were upper teeth; only 18 lower canines were unerupted. The first bicuspids were more constant, due allowance being made for the removal of some for regulation purposes. 5 per cent. were absent at 12 years of age, 2 per cent. at 13 years, and 0·86 per cent. at 14 years. As might be expected a larger proportion of second bicuspids were unerupted and here the lower ones were most frequently missing. The percentages were: 15 at 12 years of age, 8 at 13 years, and 4 at 14 years. Of course, the presence or absence of all teeth should be taken into account in endeavouring to estimate age.

Dr. E. A. BOGUE (New York) read a paper entitled

The Influence on Development of arranging Irregularly Placed Teeth into Normal Positions.

The paper was illustrated with lantern slides. At the outset Dr. Bogue explained that the question of adenoid growths and their influence had been omitted, the paper dealing more especially with the effect produced in the other structures by rendering normal an abnormal dental arch. The normal articulation was first discussed and it was pointed out that slight alterations in the position of the temporary teeth might antedate more grave irregularity in the permanent dentition. When the temporary teeth were lost early the permanent molars travelled forward and occupied a more anterior position than normal, so that early extraction might result in a diminution of the whole arch and of the accessory cavities. There was no such thing as large teeth in a small jaw, the bone being formed round the teeth after the crowns were complete. If the irregularities of the temporary teeth were noted it would be possible to prevent irregularity of the permanent dentition without extraction but by mechanical methods. The growth of the bones would be thus promoted. The results of so increasing the size of the dental arch and the jaw allowed of much better development of maxillæ as well as respiration and articulation. In the examination of many hundreds of aboriginal skulls he found that where irregularities existed in the dental arch there were also abnormalities of development in the maxillæ, palate bones, and sometimes lower sphenoid and ethmoid as well. It appeared, therefore, that by just so much as the permanent teeth were regular in their development and were regularly placed in their arches, so all the sinuses of the maxillæ and facial bones were better developed, the nasal septum became straighter, and the turbinated bones less obstructive.

Mr. COLYER considered that Dr. Bogue placed too much stress upon the influence of teeth in the development of the jaws and adjacent parts. It would rather appear that the development of the nasal cavities, &c., together with muscular development, influenced the position and arrangement of the teeth.

Mr. E. LLOYD-WILLIAMS (London) was sure that he only expressed the feelings of the section in thanking Dr. Bogue very heartily for visiting the meeting, for however much he disagreed with non-extraction and expanding methods of treating all irregularities Dr. Bogue's reputation for careful and scientific work was well known and the paper was deserving of attention.

Mr. J. G. TURNER (London) and Mr. MUMMERY also discussed the paper.

Dr. BOGUE, in his reply, said he was aware that there were objections to what he had said and it was difficult to demonstrate changes of development in the accessory nasal sinuses; unlimited expansion was, no doubt, an evil. He thanked the section for the reception of his paper.

Mr. D. P. GABELL (London) gave a lantern demonstration of Some Pathological Conditions of the Teeth.

Mr. J. F. RYMER (Brighton) read a paper on

Vegetarianism and its Effects upon the Teeth.

He considered the various diets and their necessary constituents and referred to the deficiencies of diet among the working classes. He also discussed the diet of the more wealthy classes, especially of the children, and pointed out that the more simple constituents and vegetable elements of diet had become in a large measure superseded. He then described an order of monks who were vegetarians with the addition of eggs and fish to whom he was in the habit of rendering professional services. The incidence of ordinary dental caries was very small but there were a good deal of alveolar suppuration and loosening of the teeth.

Dr. ASTLEY V. CLARKE (Leicester) read a paper on an Unusual Case of Necrosis of the Jaw occurring in a child two and a half years of age. The case was treated with anti-streptococcic serum.

A paper on an Unusual Case of Alveolar Abscess persisting for two years was read by the honorary secretary on behalf of Mr. F. L. DODD (London).

The PRESIDENT of the section (Mr. Morton Smale), in concluding the proceedings, congratulated the members on the success attained and the meeting terminated with a vote of thanks to the honorary secretaries.

TROPICAL MEDICINE.

THURSDAY, JULY 27TH.

Dr. J. M. H. MACLEOD (London) opened a discussion on

Tropical Diseases of the Skin

by regretting the absence of Dr. Jeanselme of Paris, whose presence they anticipated and hoped for, as he had made the subject of tropical dermatology a special study. Dr. MacLeod arranged tropical skin ailments into four groups: 1. Skin diseases due to some known parasite. Of these, some were due to (*a*) bacteria, such as tuberculosis cutis and leprosy, which were, however, in no way specially tropical; (*b*) streptothrix, of which Madura foot was the best example; (*c*) blastomycetes or yeast fungi which were common infections in the tropics, and recently a variety termed blastomycetic dermatitis had been described in America which, clinically and histologically, bore a certain resemblance to lupus vulgaris of the verrucose type; (*d*) hyphomycetes or moulds of which the many varieties of ringworm were examples, chief amongst which was tinea imbricata, but as the fungi of ringworm varied in Europe so, no doubt, different tropical countries had their own types: the precise fungus in pinta disease was not yet settled; and (*e*) of diseases due to animal parasites they had the world-wide acarus. Craw-craw was said to be associated in some indefinite way with filaria perstans and the pani-ghao or ground itch of Assam was considered by Dalgetty to be due to the larvæ of ankylostoma. Elephantiasis arabum had been ascribed to blocking of the lymphatics by the immature ova of filaria Bancrofti but there was much to be said against the supposition. 2. Diseases in which there was strong evidence of a parasitic origin but in which a specific micro-organism had not yet been established. In this group some kind of micro-organism either of the staphylococcus or streptococcus type seemed to be responsible. The best known were the oriental sore now found to be associated with the Leishman body and the phagedænic ulcer of warm countries. The veldt sore had been stated by Bishop Harman to be due to a diplococcus which he named the micrococcus vesicans. Pemphigus contagiosus was possibly due to a virulent micrococcus of the streptococcal type, keloid to a micro-organism of some kind, and yaws had recently been still further proved to be nearly allied to syphilis inasmuch as a spirochæta had been found in both. Under this group also might be classed ulcerating granuloma of the pudenda. 3. Diseases in which micro-organisms were generally present but were probably secondary factors in the evolution of the disease. Prickly heat and dysidrosis were of this type. 4. Non-parasitic skin affections of the tropics. Pellagra and acrodynia were no doubt due to toxins and pigmentations of the skin, vitiligo, and ainhum had also a place in the category of tropical diseases of the skin.

Dr. F. M. SANDWITH (London) read a paper on

Pinta, sometimes termed "Spotted Sickness" and "Carate."

Pinta was defined as a tropical disease caused by a fungus which produced various discolourations in the uncovered parts of the skin and sometimes on the mucous membrane. It belonged to the group of specific skin diseases caused by

vegetable parasites. Pinta was endemic in the Republic of Colombia, in Venezuela, Peru, Bolivia, Chili, Central America, Mexico, and British Honduras; isolated cases had been met with in Tripoli, Egypt, and the Gold Coast. Dirt and poverty seemed to be the predisposing agents. Nine varieties of the fungus (trichophyton pictor) were described, the differences consisting chiefly in the colour. The period of incubation was about one month; the eruption was not usually symmetrical and was accompanied by a furfuraceous desquamation. In the first stage of the disease there was active increase of pigment and in the second disappearance of pigment, a pseudo vitiligo, of which the traces were said to be permanent. The disease might last a lifetime unless treated. The treatment consisted in the application of tincture of iodine and Vleminckx's solution applied to the spots in the early stages but in long-standing cases chrysarobin or nitrate of mercury ointment might be tried.

Dr. L. W. SAMBON (London) read a paper on

Pellagra

and urged the necessity for further investigation of this disease.

Dr. J. CAMPBELL GRAHAM (Deli, Sumatra) contributed

Notes on Frambœsia Tropica

and described two cases he met with in Sumatra in Europeans, one being a Dutch girl, aged four years, and the other a German girl, aged six years. In both cases it was only when the patients reached Europe that the disease disappeared. Frambœsia was scarcely ever seen in Europeans in Java or Sumatra. The Javanese responded to treatment more satisfactorily than did Europeans. Iodide of potassium and mercury with local applications of sulphate of copper were efficient remedies and lately Dr. Graham had met with encouraging results with bicarbonate of sodium given internally.

Dr M. E. JEANSELME (Paris) sent a paper (which was translated and abridged by Dr. SANDWITH) entitled

Notes on Pian (Yaws) met with in French Indo-China.

Dr. Jeanselme did not accept the idea that syphilis and yaws were identical diseases. He tabulated the differences between yaws and syphilis and drew attention to the fact that actinomycosis, as well as yaws and syphilis, was cured by iodide of potassium. Yaws was highly contagious, children especially being liable to become infected. The disease was not hereditary.

Mr. JOHN BELL (Hong-Kong) sent a communication on

A Tropical Skin Disease.

On the sole of the foot of an Indian policeman who had been in Hong-Kong nine years Mr. Bell found a large circular patch with undermined edges. In scrapings of the sore Dr. W. Hunter discovered a parasite which he identified as rhizoglyphus parasiticus, figured in MAX BRAUN'S "Die Thierischen Parasiten des Menchen." Treatment with 4 per cent. formalin in glycerin was rapidly successful.

Mr. GEORGE PERNET (London) contributed a paper entitled

Involvement of the Scalp in Leprosy.

The hairy scalp generally escaped in leprosy but Mr. Pernet had met with two exceptions to the rule in England. In lupus also the scalp was seldom attacked, although Mr. Pernet had seen lupus develop on the scalp separately; the dilated vessels coursing over the lupus infiltrations served to differentiate them from syphilomata and lepromata in this situation.

Dr. A. ALDO CASTELLANI (Colombo, Ceylon) sent the following papers:—

(*a*) *On the Presence of Spirochætæ in Two Cases of Ulcerated Parangi (Yaws).*

This communication is most important as it serves to affiliate syphilis and yaws still more closely seeing that a spirochæta has been recently met with by Schaudinn in syphilis. The yaws spirochæta was seen by Dr. Castellani in February, 1905, as an extremely minute and almost invisible organism, stainable by the Leishman method.

(*b*) *Observations on the Dhobie Itch and other Tropical Trichophytic Diseases.*

Dhobie was the term applied by the laity in the tropics to any pruriginous skin affection, more especially when the genital regions, the axillæ, or the mammary regions were involved. In scrapings examined in liquor potassæ mycelial tubes and spores were to be seen; the segments of the mycelium were almost straight and had a double contour; the fungus grew slowly on maltose agar. In one patient in whom the disease persisted pure oil of turpentine brought about a cure. In one case met with the trichophyton of Dhobie itch attacked parts of the body other than the usual regions and gave rise to eruptions resembling tinea circinata. Dr. Castellani considered tinea and Dhobie itch as distinct diseases; the fungi of each differ and the fungi in tropical tinea were of various species and possibly differed from those met with in Europe. Dhobie itch and tinea circinata might occur in the same persons but on different regions of the body. Tinea imbricata due to the trichophyton Mansoni occurred in Ceylon. Ringworm of the scalp due to the trichophyton megalosporon endothrix was occasionally met with in Ceylon.

(*c*) *Tropical Forms of Pityriasis Versicolor.*

There were several forms of pityriasis versicolor met with in Ceylon. Two principal types might be distinguished: one black, pityriasis versicolor nigra; and one yellow, pityriasis versicolor flava. As regards the microscopical appearance of the fungi, that of pityriasis versicolor nigra was very abundant and had a mycelium of rather large size and very large spores which ran in clusters. Of pityriasis versicolor flava there were two varieties; one met with on the face, the neck, and the upper part of the trunk presented but few fungi, the mycelium being thick, irregular in shape, the spores few, not large, nor running into clusters. In the second variety of pityriasis versicolor flava the mycelium was found to be thin and regular in outline and the spores were very numerous, small, oval, and might be grouped in clusters. Judging from a few cultures made the fungi appeared to differ in their characteristics culturally.

Dr. KARL GROSSMANN (Liverpool) showed coloured photographs of Icelandic lepers by lantern slides, directing attention more especially to the condition of the eyes and palpebral surroundings.

In the discussion which followed Professor R. W. BOYCE (the President of the section), Dr. H. RADCLIFFE CROCKER (London), Major G. H. FINK, I.M.S., Dr. A. J. CHALMERS (Ceylon), Dr. SANDWITH, Dr. C. F. HARFORD (London), Dr. D. E. ANDERSON (Paris), and Mr. J. CANTLIE (London) took part.—Dr. CROCKER, discussing Dr. MacLeod's paper, pointed out the unsatisfactory state of the pathology of elephantiasis arabum and the confusion in regard to the varieties of ringworm. He also described a case of granuloma in the groins in a negro who had resided in London for many years.—Major FINK said that oriental sore was known by a variety of names in India. The idea prevailed in some parts of India that persons who suffered from oriental sore were believed to be rendered more or less immune to malaria. Major Fink also showed photographs of microscopic flagellates obtained from oriental sores which he had examined and of sand flies which he had collected with flagellated organisms like parasitic cercomonas in their interior.—Dr. SANDWITH, dealing with the relation of maize infected by weevils to pellagra, stated that he did not consider weevils the direct cause of pellagra in man, though it was true that weevils and mould often infected the maize side by side. The female weevil pierced the grain with its snout in order to make a convenient hole to lay its eggs in; it was therefore obvious that its could easily introduce inside the grain (which might be afterwards eaten by man) any spores of a fungus which happened to be outside the grain.

THE ANNUAL EXHIBITION.

V.—MINERAL WATERS, BEVERAGES, ETC.

MINERAL waters and beverages were not strongly represented and those shown belonged to the class of natural waters. The water derived from Vittel in the Vosges deserves attention, since it has gained reputation in the treatment of gouty disorders and urinary diseases. The water is not highly mineralised, is "clean" to the palate, and slightly alkaline. There are three springs at Vittel, the waters of which vary slightly as regards their mineral contents and two of them are ferruginous. Vittel contains all the usual appointments of a hydrothermal establishment. Another interesting natural mineral water from France, but without claims to any particular medicinal value, is Perrier, which contains its own natural carbonic acid gas associated with small quantities of carbonates. The water is agreeable to the palate and well adapted for table purposes. Apollinaris water and Johannis water are, of course, well known and samples were exhibited

by the Apollinaris Co., Limited, of 4, Stratford-place, Oxford-street, London, W. Samples also of Apenta from the natural bitter water springs near Budapest were shown. The waters of the State springs of Vichy were illustrated in the exhibit of Messrs. Ingram and Royle, Limited, of East Paul's Wharf, 26, Upper Thames-street, London. Samples also were shown of natural Carlsbad salts and Contrexéville water from the Pavilion springs. The waters of Buxton, Harrogate, and Leamington, together with photographs illustrating the hydropathic equipments at these places, were exhibited by the Buxton urban district council and the Harrogate and Leamington corporations respectively. Lastly, Messrs. C. Oppel and Co., of 10 and 12, Milton-street, London, E.C., exhibited samples of Friedrichshall water, which belongs to the pure bitter saline class of natural waters.

VI.—PUBLICATIONS.

The only publishers exhibiting were Messrs. W. B. Saunders and Co. of 9, Henrietta-street, London, W.C. (medical hand atlases and new surgical and medical works), and Mr. H. K. Lewis of 136, Gower-street, London, W.C. (practical series and the New Sydenham Society's publications).

VII.—MISCELLANEOUS.

The miscellaneous section of the exhibition chiefly comprised motor-cars designed more or less for the use of the medical man. The Clyde Motor Co., Limited, of Leicester, showed a Clyde 7–8 h.p. doctor's car, and besides a three-seated tonneau car and a Clyde 6-h.p. tricar. The Ryknield Engine Co., Limited, of Burton-on-Trent, exhibited a well-designed car called the "Doctor's Landaulette," with 15-h.p. vertical engine and three separate cylinders. The Polymobile Co., of 6, Christopher-street, London, E.C., brought to the notice of the visitors a special car which has been designed for the medical practitioner. The Anglian Motor Co., Limited, of 78, Brompton-road, London, S.W., showed their Anglian light car and a tricar fitted with two speed gear and a motor bicycle. The Humber Co., Limited, of Coventry, exhibited their well-known Humber four cylinder touring car as well as three light cars. Lastly, Mr. S. J. Lilley, of Welford-place, Leicester, exhibited a motor-car and a medical brougham of excellent design, and the Central Motor Car Co., Limited, of 117, Long Acre, London, showed two examples of a 10-h.p. Ford car, one of which is provided with an attachable "tonneau," making the car "four-seated" or two-seated at will. Opportunities were afforded during the meeting of making trial runs in some of the cars exhibited.

THE PATHOLOGICAL MUSEUM.

THE Pathological Museum in connexion with the annual meeting of the British Medical Association, although itself of wide and varied interest, has undoubtedly gained enormously this year by being situated under one roof with all the sectional meeting rooms. Indeed, we have never before seen the museum utilised to such an extent or by so many visitors as in the present instance or the removal of individual specimens from the museum for the purpose of illustrating members' communications and discussions in the sections so readily carried out. The numerous exhibits comprised wet specimens, dried preparations, water-colour and oil paintings, photograms, skiagrams, microscopical preparations, and a large variety of lantern transparencies, both in monotone and in colours, and they were arranged in conspicuously labelled divisions to correspond with the various sections, so that it became an easy matter to find the exhibits relating to any particular subject.

The large room on the first floor of the technical school in which the museum was housed was divided by partitions into three nearly equal compartments, one of which, that to the right of the entrance, was entirely filled by the exhibits of the gynæcological section. This exceedingly fine collection of specimens, &c., was, we understand, secured chiefly by the efforts of Dr. Louisa Garrett Anderson, one of the secretaries of that section. Grouped with consecutive numbering, the specimens illustrated extra-uterine gestation, degeneration of fibroids, malignant disease of the uterus, adenomyoma of the uterus, and a group of miscellaneous specimens, the most striking of which were full-sized sections of the pregnant tube and uteri showing cancer, tubercle, &c. The pathology of extra-uterine gestation was fully illustrated by drawings and sections from a case of ovarian pregnancy shown by Dr. Catherine van Tussenbroek of Amsterdam, and by an excellent series of sections, drawings, and slides shown by Dr. G. H. A. Comyns Berkeley and Dr. W. F. Victor Bonney. The group of specimens showing the degeneration of fibroids was particularly complete, the largest number and most interesting of the exhibits being contributed by Dr. S. J. Cameron (Glasgow), Dr. A. Leitch (Glasgow), and Mr. C. J. Bond (Leicester). Another exhibit in this group that attracted considerable attention was a series of 15 photographs illustrating degenerations of fibromyomata prepared by the Sanger-Shepherd three-colour process—the work of Miss A. Debenham.

The exhibits of the Section of Pathology occupied the central compartment of the museum and a portion of that to the left of the entrance and included many of more than passing interest. Immediately within the doorway was arranged a series of delicate little water-colour sketches lent by Dr. F. W. Mott (London) illustrating trypanosomes in blood-vessels of the central nervous system of animals, microscopical appearances of the lesions in sleeping sickness and in various forms of meningitis, &c., which bore high testimony to the skill and fidelity of the artist, Miss Kelly. Equally noteworthy was an extensive series of specimens illustrating the naked-eye appearances of leucoblastic and erythroblastic conditions of the bone marrow associated with various diseases, acute and chronic, and supplemented by a series of photomicrographic representations of bone marrow obtained from animals as well as from the human subject. These were exhibited by Dr. W. E. Carnegie Dickson (Edinburgh). Mr. Richard Muir (Edinburgh) showed a splendidly executed set of black-and-white drawings of pediculi and micro-photo transparencies illustrating the life-histories of trematode, cestode, and nematode worms and of malarial parasites. Not far off were to be seen embryo nematodes and the newly described *schistoma Cattoi* exhibited by Dr. J. Catto. Mr. W. Sampson Handley (London) showed a series of drawings, photographs, and microscopical preparations, illustrating by means of sections through the growing edge the theory that permeation is the principal factor in the dissemination of mammary cancer, and Mr. Bond (Leicester) had arranged a comprehensive series of photographs of uterine and ovarian physiology and pathology in the rabbit. Perhaps the exhibit which produced most comment was that shown by Mr. C. C. Hurst, F.L.S. (Burbage), consisting of specimens of peas, sweet peas, orchids, rabbits' pelts, and diagrams of domestic fowls and their combs, illustrating the principal point of Mendel's law of heredity—viz., the separate inheritance of single characters and the segregation and gametic purity of such characters after crossing.

The exhibit of the Section of Medicine was a small one but included an interesting series of wet specimens shown by Dr. R. A. Bolam (Newcastle upon-Tyne) of aneurysm of the left ventricle and a number of photographs and skiagrams from cases of acute and chronic joint disease lent by Dr. Bertram L. Abrahams (London). A number of radiographs and some striking painted photographs of rodent ulcer and x ray dermatitis by Mr. J. Hall-Edwards (Birmingham) were placed in the Section of Surgery, together with an extensive set of radiographs of foreign bodies, stones, fractures, and deformities by Mr. C. Thurstan Holland (Liverpool). The Section of Navy and Army was occupied by an extremely interesting collection by Fleet-Surgeon C. Marsh Beadnell, R.N., of Lee-Enfield, Lee-Metford, Remington, and Mauser cartridges, bullets; various articles of clothing and materials showing bullet apertures and a series of Filippino skulls illustrating bullet wounds. To complete this series Mr. Lynn Jenkins (Hinckley) had lent a collection of shells and bullets from South Africa. The exhibit of the Section of Tropical Medicine was small also, the chief feature being the set of original drawings shown by Dr. J. H. MacLeod (London), illustrating the histo-pathology of yaws, lepra, syphilis, &c.

ST. PETERSBURG LADY PRACTITIONERS AND OPHTHALMOLOGY.—The Women's Medical Institute has again requested a subsidy from the St. Petersburg town council for the founding of an eye clinic. A similar request previously made had been refused but the need is so urgent that this time it is expected that the council will consent on the condition that the clinic is opened for the St. Petersburg population in accordance with the requirements of the town medical adviser.

THE LANCET.

LONDON: SATURDAY, AUGUST 12, 1905.

"Earth Temperature and Diarrhœal Diseases."

THE seasonal variations in the incidence of many acute and epidemic diseases are well recognised and have long exercised the minds of clinicians, hygienists, and bacteriologists. Much speculation has arisen and not a few experiments have been carried out with the object of throwing some light upon the relationship existing between meteorological and telluric conditions and the incidence of these diseases. So long ago as 1855 Dr. EDWARD SMITH published a paper[1] in which the conditions of atmospheric temperature, rainfall, and other climatological factors were carefully considered in relation to the outbreak of cholera in London in the previous year. Some years afterwards Dr. EDWARD BALLARD published a series of papers[2] in which he examined the influence of weather and season upon public health after a statistical study of 217,000 cases of disease occurring during nine years. The importance of the nature and the condition of the soil in relation to the occurrence of some bacterial diseases was also early recognised and studied by Sir GEORGE BUCHANAN, Dr. BOWDITCH, and Professor PETTENKOFER. In no group of diseases is the relationship between incidence and meteorological conditions more marked than in that which comprises cases of diarrhœa and acute gastro-enteritis. It has long been recognised that a hot, dry summer is associated with a larger number of cases and a heavier rate of mortality than a cool or wet one. The relationship was investigated by Dr. BALLARD and an exhaustive report was presented by him to the Local Government Board in 1837. Among many other inquiries he compared the curve of incidence of diarrhœal diseases in London and other towns with those of the temperature of the earth at depths of one foot and four feet below the surface respectively. His main results may be briefly summarised as follows. The summer rise of mortality due to these diseases does not occur until the temperature of the soil four feet below the surface reaches the level of 56° F. and the maximum mortality occurs in the week at which the temperature of the soil at the four-feet level attains its mean weekly maximum, while the decline of diarrhœal mortality coincides with the decline of the temperature of the soil at that level and does not follow the curve of the temperature of the atmosphere or of the soil at a depth of one foot.

These observations have been extensively quoted in various monographs and text-books but few attempts seem to have been made to put them to the test or to investigate the nature of the connexion between the two series of records.

[1] Transactions of the Royal Medical and Chirurgical Society, vol. xxxviii., 1855, p. 101.

[2] Ibid., vol. l.-li.

A paper has recently been published[3] by Sir JOHN W. MOORE on Earth Temperature and Diarrhœal Diseases in Dublin in 1904, in which this relationship has been tested by him in conjunction with his son, Mr. A. R. MOORE. Although the observations deal with one year only, owing to the fact that a climatological station was not installed at the University of Dublin until Jan. 1st, 1904, yet the results obtained are of considerable interest and confirm in the main those previously recorded by Dr. BALLARD. It was found that the diarrhœal mortality in the Dublin district was very small until the third week after the temperature of the subsoil at a depth of four feet had passed the critical level of 56° F., while the maximum mortality followed a fortnight after the maximum temperature. This fortnight of latent period or delay Sir JOHN MOORE attributes to the time occupied by the progress of the cases to the fatal issue and in the subsequent registration of the deaths. This seems to us in view of the rapidly fatal character which the disease frequently assumes to require verification which is, however, a matter of some difficulty, since the duration of the fatal illness is rarely recorded upon the certificate of death. It was further found that the four-feet earth thermometer stood at 56° F. or upwards for 11 weeks—namely, from July 10th to Sept. 24th. Taking a period of 11 weeks, dating from a fortnight later to allow for the period of latency—that is, from July 24th to Oct. 8th—the striking total of 249 deaths was found to have occurred, which is 71·7 per cent. of the total mortality from diarrhœal diseases for the year—namely, 339.

Dr. BALLARD, in the report to which reference has already been made, deduced the following conclusions from his observations. The essential cause of epidemic diarrhœa resides ordinarily in the superficial layers of the earth where it is intimately associated with the life processes of some micro-organism which is dependent among other things upon conditions of season and on the presence of dead organic matter which is its pabulum. On occasion this micro-organism is capable of becoming air-borne and infecting food and there finding conditions favourable to its development; and during development it leads to the production of a virulent chemical poison which is, in the human body, the material cause of epidemic diarrhœa. It is impossible not to admire the ingenuity and the far-sighted character of these deductions and it may be confessed that after a lapse of 18 years there is little to add to them. Most of them have been amply confirmed. Even now, however, our knowledge is far from complete with regard to the bacteriology of these cases, since such various organisms as Klein's bacillus lactis aerogenes, the bacillus coli and its congeners, and the bacilli of dysentery of Flexner and Shiga have all been isolated from cases of this nature. Probably it will be found that there is more than one exciting cause of diarrhœa of epidemic character. The relations between the growth of certain pathogenic bacteria in soil and the conditions of the soil itself have been the subject of investigation in this country by Dr. SIDNEY MARTIN and Dr. A. C. HOUSTON. Dr. MARTIN[4] has carefully studied the growth of the typhoid bacillus and has

[3] Dublin Journal of Medical Science, May, 1905, and THE LANCET, Feb. 25th, 1905, p. 500.

[4] Annual Report of Medical Officer to Local Government Board, 1900-01; THE LANCET, Sept. 13th, 1902.

found that in certain virgin soils it neither lives nor grows but after cultivation such soils when sterilised become capable of maintaining the bacillus for a limited time. On the other hand, cultivated soils when unsterilised are inimical to the growth of typhoid bacilli which disappear in about 12 days after being placed in them. Dr. MARTIN concluded that the disappearance of the typhoid bacillus was probably due to the deleterious action on its growth of the products formed by the bacteria natural to the soil. Dr. HOUSTON has further investigated the question [8] and has found that if sewage be added to garden soil there is only a temporary increase of sewage microbes at the expense of the soil microbes, the latter eventually ousting the former, and also that pathogenic bacteria do not maintain their vitality for more than a brief period in the superficial layers of the soil. A further point of some interest, clearly brought out in Sir JOHN MOORE'S charts, is the influence of rainfall in diminishing the mortality of diarrhœal diseases. On two occasions during the epidemic period a rainfall of an inch or upwards was followed after a fortnight's interval by a definite fall in the mortality. According to Dr. A. NEWSHOLME rainfall is of more importance than temperature in relation to this disease. The whole subject of the relation of disease-producing organisms to meteorological conditions in the widest sense is one which offers a great field for future work, with the promise of results of far-reaching importance; and we welcome the interest which has been aroused in this matter in the United Kingdom.

The Control of Proprietary Remedies.

A SERIOUS attempt is being made by the Council of Pharmacy and Chemistry of the American Medical Association to control the various secret remedies which are put before the medical profession in that country. The following particulars of the scheme are taken from a copy of the rules for which we are indebted to the courtesy of a well-known firm of druggists. It appears that in the United States of America there is a rapidly growing sentiment against the increasing legion of secret preparations. The *Journal of the American Medical Association* conceived the idea of forming a board of control, to be composed of pharmacists and chemists, which should pass in review all medicinal preparations offered for insertion in the advertising pages of that journal. That idea has been modified by making the functions of the proposed board similar to those of the Committee of Revision of the United States Pharmacopœia. The work is to be taken up where that committee left off and a description of the unofficial preparations which conform to the required standard will be published in the form of a book to be entitled "New and Unofficial Remedies." In other words, it will form an extra pharmacopœia giving useful details of reputable preparations. The board of trustees of the American Medical Association has authorised the formation of an advisory board, to be known as the Council of Pharmacy and Chemistry, to carry out the work. The council is composed of men eminent in medicine and pharmacy as writers, teachers, and research workers. The council proposes immediately to examine into the composition of the various medicinal preparations that are offered to physicians and are not included in the United States Pharmacopœia or in other standard text-books or formularies. In the rules here given the term "article" is applied to any drug or preparation used in the treatment of disease.

RULE 1.—No article will be admitted unless the names of the active ingredients and the strength be given for publication. It is considered the duty as well as the right of the physician to know the composition of medicines which he prescribes for his patients. No one would voluntarily call in a physician who was in the habit of prescribing remedies the constituents of which were not known to him. The published statement will in some instances give the general character of the vehicle and flavouring agents, and in the case of preparations intended for external use the character of the vehicle or base must be stated in order to indicate whether the article has penetrative or simply protective properties.

RULE 2.—No chemical compound will be admitted unless information be furnished regarding tests for identity, purity, and strength, and in the case of a synthetic compound the rational formula must be given.

RULE 3.—No article that is advertised to the public will be admitted, excepting disinfectants, cosmetics, foods, and mineral waters, when such articles are advertised in an unobjectionable manner.

RULE 4.—No article will be admitted bearing the names of diseases in the treatment of which the article is indicated but the therapeutic indications, properties, and doses may be stated. This rule does not apply to vaccines and antitoxins, nor to advertising in medical journals, nor to literature distributed solely to physicians. This rule is framed with a view of stopping the practice of self-drugging, and is in the interests alike of the laity and the profession. The laity are not competent to determine whether the employment of a given article is safe and proper, and they are often induced to continue its use or to recommend it to others quite regardless of the evident dangers of forming drug habits or of doing serious injury by employing a remedy that in reality may be contra-indicated. It is the prerogative of the physician alone to determine in what disease a given article may be indicated.

RULE 5.—No article will be admitted or retained about which the manufacturer or his agents make false or misleading statements regarding the country of origin, the raw material, or the method of collection or preparation.

RULE 6.—No article will be admitted or retained about whose therapeutic value the manufacturer or his agents make unwarranted, exaggerated, or misleading statements.

RULE 7.—Labels on articles containing poisonous substances should show the amounts of each of such ingredients in a given quantity of the product. This information enables the pharmacist to safeguard the patient and physician.

RULE 8.—Every article should have a name indicative of its chemical composition or pharmaceutical character in addition to its trade name, when such trade name is not sufficiently descriptive.

The manufacturers of legitimate preparations have nothing to fear from this action on the part of the American Medical Association. On the contrary, they are to be congratulated that the Association has undertaken to separate the wheat from the chaff. In this country medical practitioners are overwhelmed with samples and literature of preparations which may be good, bad or indifferent. The composition is not usually disclosed and the habit is formed of throwing all aside, the good and the bad together. The list of unofficial

[8] Reports of Medical Officer to Local Government Board, 1898–1902.

preparations of known composition and strength when published by the American Medical Association should prove valuable to the medical profession and a safeguard to the public. Measures of similar character might with advantage be adopted in this country. It should not be difficult to find funds for the purpose, especially if a working arrangement were made with the American Medical Association whereby each country should investigate its own products to avoid covering the same ground twice.

Though the rules adopted by the American Medical Association are good and worthy of imitation they are not sufficiently comprehensive to nullify entirely the present system which leads to self-drugging. The weak points are not hard to find. Let it be imagined that a practitioner prescribes a preparation which is labelled on the lines laid down in the rules, as follows: "A hypnotic and sedative, containing three-quarters of a grain of morphine in 110 minims. Dose 5 to 30 minims." Unless the practitioner initials and dates the prescription whenever he requires it to be repeated there is nothing to prevent the repetition of the prescription dozens and even hundreds of times. Pharmacists should be requested to consider it a breach of etiquette to copy a prescription for a patient or to make it up for any other person. Again, it should be a rule that no proprietary medicine should be delivered to the patient in the original package in order to prevent the purchase of further supplies without a prescription. The excellent rules of the American Medical Association should therefore be supplemented by further rules for the guidance of pharmacists on these points touching the repetition of prescriptions and the transference of medicines from original packages before delivery to the patient. A set of rules of this kind, supplemented by a more complete code of pharmaceutical etiquette, would benefit alike the public and the medical profession and should find a place in the system of medico-pharmaceutical ethics.

Again, it is obvious that another weak point in the proposed scheme is that it will almost of necessity fail to touch the very class of secret or proprietary remedies which are productive of the largest amount of self-drugging—viz., so-called "patent" medicines produced for the express purpose of appealing to the credulity of the multitude. Since the proposed list is rightly intended solely for the use of medical men the failure to secure recognition will hardly be of any material detriment to the sale of such preparations which will still be advertised in the lay journals and reach the public for whom their proprietors cater.

The Prevention and Treatment of Anthrax in Man.

THE danger of infection from anthrax incurred in the handling of wools, hides, and horsehair, especially in the sorting and preparation of imported supplies from certain foreign districts, has long been recognised in this country and the popular name of "wool-sorters' disease" frequently applied to some of these infections is an evidence of this. To endeavour to deal with this matter and to minimise the risk of infection the processes of sorting, willowing, washing, combing and carding wool, goat hair, and camel hair have been classed as dangerous and included within the provisions of the Factory and Workshop Act, 1901, and all cases of anthrax contracted in connexion with such industries must be reported to the Home Office. After a detailed discussion at Bradford by a joint committee, to which representatives of both masters and men were invited, a draft series of regulations has been issued by the Home Secretary and transmitted to those whom they concern, with an accompanying letter dated July 13th, stating that if objections of substance are taken to them either by the occupiers or the workpeople, or by any other persons affected, these objections, which must be addressed in writing to the Home Secretary, together with the specific grounds of objection, will be the subject of full inquiry by a competent person appointed by the Home Secretary before the final regulations are made. At this inquiry employers, owners, occupiers, workpeople, and all others concerned will be entitled to a full hearing.

The draft copy of the regulations contains a short note describing in simple terms the character of the disease and the probable channels and methods of infection, such as by breathing or swallowing the dust from infected wools or hairs or by such dust lodging in a cut or scratch or in the cracks of chapped hands. The proposed regulations deal especially with the opening, sorting, and willowing of wool and hair, which for this purpose are classed under three schedules. Schedule A comprises Van mohair, Persian locks, and Persian, or so-called Persian (including Karadi and Bagdad), if not subjected to the process of sorting or willowing; all in this class must be thoroughly steeped in water while in the bale before being opened. Schedule B includes alpaca, pelitan, East Indian cashmere, Russian camel-hair, Pekin camel-hair, and Persian, or so-called Persian (including the two above named), if previously sorted or willowed; hairs and wools in this class may either be opened after steeping or over an efficient opening screen with mechanical exhaust draught in a room set apart for this purpose. Schedule C simply includes all mohair other than Van mohair; these need not be opened over a screen but must be sorted over a board provided with a downward draught. It is further ordered that all opening and sorting shall be carried out by men skilled in judging the condition of the material and that 1000 cubic feet of space shall be allowed for each person in each sorting room and that there shall be efficient ventilation. All pieces of skin, scab, clippings, or shearlings shall be removed daily and disinfected or destroyed, and detailed regulations are proposed for dealing with the dust extracted by exhaust draughts and for the supply of respirators and overalls to be worn by all persons engaged in collecting and removing the dust. The floor of every room where opening, sorting, or willowing is carried on is to be sprinkled with disinfectant solution daily and to be swept immediately after sprinkling; the walls and ceilings are to be cleansed and lime-washed regularly. Suitable washing accommodation and rooms for meals are to be provided away from the sorting and willowing rooms. No person with an open cut or sore is to be allowed to work in the rooms and requisites for treating scratches and slight wounds are to be kept at hand. These regulations seem to represent a very fair and equitable attempt to deal with a difficult problem and we may

express the hope that the owners and the men concerned will loyally support the measures recommended, the more so that they have been carefully consulted in these preparations and still have opportunity for suggesting improvements or alterations.

To prevent infection by horsehair and by hides and skins seems, if anything, a more difficult matter, since even steam disinfection or boiling of horsehair cannot be absolutely relied on, while in the case of hides the anthrax spores resist even the action of the fluids used in tanning and it is difficult, if not absolutely impracticable, to disinfect hides which have to be tanned subsequently. Unfortunately, the most rational method of dealing with the problem, that of preventing the importation of infected wool, hair, and hides, is a counsel of perfection which is unattainable. For much valuable information on the subject of infection from anthrax in relation to industrial processes we are indebted to the valuable Milroy lectures delivered before the Royal College of Physicians of London by Dr. T. M. LEGGE, His Majesty's medical inspector of factories.[1] Dr. LEGGE deals especially with the 261 cases reported to the Home Office during the six years 1899–1904. Of these 88 occurred in worsted- and wool-workers, 70 in workers with horsehair and bristles, 86 in those engaged with hides and skins, and the remaining 17 in those engaged in miscellaneous occupations, such as horn-workers, rag-sorters, and porters. The cases infected through wool occurred almost entirely in the Bradford district of the West Riding and in Worcestershire, the reason being that in these places the dangerous classes of wool are used, while colonial wools, which are free from infection, are used elsewhere. On the other hand, cases due to horsehair are more general in their distribution, while those due to hides and skins occur mainly in London and Liverpool. Cases of anthrax also occur among persons coming in contact with infected live cattle or engaged in slaughtering or in the disposal of the carcasses, but it is difficult to obtain statistics of these, except of the fatal cases. Dr. LEGGE'S figures, however, show that since 1899 the majority of the fatal cases (55 out of 72) have occurred in association with factories or workshops. Among the 261 cases investigated by Dr. LEGGE there was a mortality of 25·6 per cent., which agrees very closely with the rate of 24·1 per cent. among 34,052 cases occurring during the 11 years 1889–1900 in Italy, where the disease is notifiable. It is of interest to notice the source of the materials to which these 261 cases have been attributed. No single case has been traced during the whole six years to wools imported from Australia and New Zealand, although the amounts are very large, the value in 1902 of such imports being estimated at over £13,500,000, whereas at least 30 cases and possibly 40 occurred from Persian wool, the value of which in 1902 was only a little over £13,000. Apparently the reason there is a demand for Persian wool is due to the fact that the Persian breed of sheep is one of the few in which the wool is naturally of a black, brown, or fawn colour. In regard to horsehair the infected supplies seem to come chiefly from Russia and China—in fact, some observers maintain that all bales of mane hair from China should be regarded as infected.

In regard to the prevalence of anthrax its occurrence in animals offers some difficult problems for discussion. Anthrax is a not uncommon disease of animals in all parts of the world; in Great Britain during 1903 there were 1143 cases. The incidence of anthrax shows some peculiar seasonal variations which are different in different countries, the probable explanation being the variations produced by seasonal changes in the conditions favouring the growth of the organism outside the body. There is no doubt that animals have been infected by the refuse from factories in which raw animal products are dealt with but it is probable that many cases are due, as suggested by Professor J. MCFADYEAN, to artificial manure and imported foodstuffs, which it has been shown may be carriers of the infection. Again, infection may occur from other cases of the disease or from the careless treatment and disposal of the carcass of an animal dead from the disease. The treatment adopted in human cases, in which the disease is usually local, cases of internal anthrax being rare nowadays, has until recently consisted in simple surgical procedures, such as excision or cauterisation or of subcutaneous injections of weak carbolic acid solutions, while some surgeons have applied powdered ipecacuanha to the wound and have administered the same drug internally. Since 1897, when Professor SCLAVO of Siena first introduced his anti-anthrax serum, widely extended trials of the serum treatment have been made and, according to Dr. LEGGE, who has devoted particular attention to this matter, it is claimed that even in large doses the serum is innocuous, that no case is fatal if serum is given in an early stage, that some apparently hopeless cases have been saved by it, that it reduces the destruction of tissue to a minimum, and, lastly, that in internal anthrax it is the only treatment affording any hope. After injection of the serum there is usually a rise of temperature, often above 105° F., which Professor SCLAVO regards as of favourable prognostic import. The mode of action of the serum is at present the subject of some controversy; Professor SCLAVO regards its main effect as that of stimulating the defensive activities of the phagocytes. It is certainly rather an antibacterial than an antitoxic action. During the past year SCLAVO's serum has been used in this country and cases have been recorded[2] with encouraging results and afford us some grounds for hoping that the present mortality-rate of 25·6 per cent. may be very considerably reduced. It is of interest to note that in Santa Croce, an Italian town with a number of tanneries, the workers practically insist on having the serum treatment and being now no longer in fear of operation present themselves for treatment at an early stage of the disease.

[1] Vide THE LANCET, March 18th (p. 689) and 25th (p. 765) and April 1st (p. 841), 1905.

[2] THE LANCET, Feb. 4th, 1905, p. 292, and Brit. Med. Jour., Jan. 7th and Feb. 11th.

POLISH DEATH CERTIFICATES IN RUSSIAN.—According to the *Kur. Lodz*, Dr. Grosglika has protested against the requirements of the Warsaw Medical Department that certificates of death submitted as to insurance or for permission to remove bodies should be in Russian. His protest has been reinforced by that of 96 other medical men of Warsaw and a number of lady medical practitioners.

Annotations.

"Ne quid nimis."

THE WORK OF THE GOVERNMENT LABORATORY.

THE report of the principal chemist of the Government laboratory generally affords interesting reading and the one recently issued is no exception. The total number of analyses and examinations made in the laboratory in Clement's Inn Passage during the year ending March 31st, 1905, was 88,757. It is obvious that the work must relate to many diverse substances and must therefore require knowledge and experience in almost all the branches of chemical analysis. We are therefore disposed to suggest that the Government might see its way to publish a book on the analytical methods employed in its laboratory. Such a book would not only lead to the adoption of uniform methods of analysis and so avoid controversy based on different methods employed but would be of the greatest value to the general analyst. We commend this suggestion to Dr. T. E. Thorpe, the able principal of the Government laboratory. The laboratory returns this year afford additional evidence of the fact of the reduced consumption of alcoholic beverages, since the number of samples of beers, wines, and so on, examined was considerably less than in the previous year. It is interesting in passing to consider the causes of the decided decline in the consumption of alcoholic beverages. It would appear that this consumption bears some relationship to the prosperity of the country. In prosperous times the consumption increases so that doubtless diminished spending power is a factor, while we think that the recent revelations in regard to the practice of substitution in the wine and spirit trade, in which we have taken a share, have made an undoubted impression upon the public. Owing to the recent proceedings in the police courts against vendors of brandy not made exclusively from the juice of the grape there has been an increase in the number of such samples referred to the laboratory and 13 cases were referred to the Government chemists under the Sale of Food and Drug Act. We are glad to find that the Government chemists were able to sustain the charge of adulteration in regard to 11 of the samples. Our satisfaction is due to the fact that the Government chemists evidently agree with us that chemical analysis does throw light on the question as to whether brandy is or is not made from grape juice. We note that grape juice is admitted free of duty provided that it is genuine and free from spirit. This concession seems to us to encourage the production of wines, the so-called basis wines, in this country which thus escape the duty that is levied on imported wines. This seems to be not only unfair to the importers of wine in this country but to be calculated to give rise to a fraudulent practice. There is no doubt that large quantities of grape juice are imported into this country and fermented into wine which is afterwards sold as genuine Bordeaux wine. There has been a decided increase in the number of samples of tea examined owing, no doubt, to the increased duty on tea resulting in larger importations of lower grade qualities. In regard to the examination of beer there is shown to be a marked diminution in the amount of arsenic found in the materials used in the brewing of beer as compared with the last official year. Butter continues to be imported into this country containing boron preservatives but, as Dr. Thorpe points out, there is a difficulty in restricting this admixture so long as a legal limit is lacking. But why should a legal limit be lacking since we gained the definite pronouncement of a departmental committee on this question some years ago? Under the Sale of Food and Drugs Act 105 samples in all were examined and in ten of these, or 9·5 per cent., the Government chemist's conclusions differed from the public analyst as against 14·4 per cent. last year and 15·2 per cent. for the previous year. It is evident that the work of the public analyst in this country is reaching a higher standard in each succeeding year.

THE HOSPITAL SUNDAY FUND.

IT is now possible to calculate fairly closely the result of the thirty-third annual collection on behalf of the Metropolitan Hospital Sunday Fund, which took place last June. The amount actually received at the Mansion House up to date, including Mr. Richard Herring's generous contribution, exceeds £75,000, and in all probability another £3000 will be received before the close of the financial year of the Fund on Oct. 31st next. It was hoped that the much-coveted sum of £100,000 would have resulted from the collection this year; but bearing in mind the many generous contributions which have been made to King Edward's Hospital Fund, and the many appeals which have been made for financial support for individual hospitals, the collection of £78,000 as a result of the appeal of the Metropolitan Hospital Sunday Fund for 1905 is by no means an unworthy effort and is some £14,000 more than any total that has been previously collected. On behalf of the suffering poor of our London hospitals we thank all those who have so generously contributed to this gratifying result.

RED RUBBER.

IN our issue of June 10th we published a letter from Mr. F. A. Pond of Liverpool drawing attention to the amount of antimony contained in red rubber and to the possibility of a connexion between the use of red rubber rings in bottles of effervescing beverages and food materials and the occurrence of cases of appendicitis and other intestinal disorders. In commenting on this communication[1] we pointed out that the antimony in red rubber is with great difficulty dissolved out of it and after careful trials we could find no evidence that any such solution occurred in the fluids ordinarily kept in the bottles. At the same time we considered the use of rubber of this character for the purpose as undesirable. We have received from a correspondent a copy of the *Wochenschrift für Brauerei* of July 22nd containing an article criticising Mr. Pond's conclusions in very much the same sense. It is there stated that the antimony in red rubber is almost insoluble in organic acids, such as 10 per cent. acetic, but is soluble in hydrochloric acid. On the other hand, there is no evidence of its being dissolved by beer, conserves, or drinks containing fruit juices. The statement that small particles of the rubber become detached and swallowed is also looked upon as very improbable, since particles of cork, which are more frequently found in beverages kept in bottles, are rarely swallowed, and even if small particles of rubber should reach the stomach it is unlikely that the digestive juices would be capable of exerting any solvent action upon them. The writer of the article regards it as noteworthy that in Mr. Pond's series of cases the beverages used were for the most part non-intoxicating or non-alcoholic in character and suggests that since antimony is not dissolved by them some constituent of the fluids themselves may be responsible. He offers the suggestion to medical men that the saponin preparations frequently used to induce frothing of temperance beverages may be the cause of the sequence of events occurring in such a series of cases as that observed by Mr. Pond, since Kobert[2] has recorded weakness and

[1] THE LANCET, June 24th, 1905, p. 1736.
[2] Toxicologie, p. 23.

paralysis of muscles following the administration of saponin bodies. Coming from a brewing journal and being printed in larger type, the suggestion looks not unlike hoisting the teetotaler with his own petard but it is made in all seriousness. The article concludes with the statement that rubber manufacturers can easily produce rubber rings free from antimony and yet of equal value to those at present in use. We may add that we have received a further communication from Mr. Pond in which he points out that the Austrian Government has a regulation to the effect that tubes, rings, teats, and the like used for feeding-bottles, and rings used in bottles for preserves, which are prepared with antimony may only be employed for this purpose when they yield no antimony on being treated with tartaric acid.

PANCREATITIS IN MUMPS.

THE structure of the pancreas so closely resembles that of the salivary glands that the Germans have called it the "abdominal parotid." This similarity suggests that the metastases of mumps should include pancreatitis. However little has been written on the point. Perhaps the most important communication is one by M. Simonin.[1] He found that symptoms of pancreatitis occurred in ten out of 652 cases of mumps treated in the military hospital of Val-de-Grâce. The pathology of the pancreatitis is only a subject of inference, for it generally runs a benign course and no opportunity is given for examination of the gland. At the meeting of the Société Médicale des Hôpitaux of Paris on July 7th Professor G. H. Lemoine and M. F. Lepasset reported a case of pancreatitis in mumps which is of great importance, for it is the first on record in which a necropsy has been performed. A soldier, a native of Algiers, aged 19 years, was admitted into hospital on Oct. 2nd, 1902, suffering from mumps. The only previous illness was malarial fever. The case ran a benign course, the temperature not rising above 100·2° F. and becoming normal on the fifth day. On the eighth day the illness appeared to have terminated but on the evening of the tenth day there was a rigor with a rise of temperature to 103·8° and pain and swelling in the right testicle. The orchitis rapidly subsided, the temperature became normal on the fourteenth day, and the patient was again pronounced convalescent, but when visited on the morning of the fifteenth day he complained that he had not slept and that he vomited several times during the night. Although the temperature was normal he appeared to be prostrated. The conjunctivæ showed a slightly icteric tinge. The upper abdomen was tender, especially in the epigastrium and the region of the gall-bladder. Here the patient had a feeling of weight. The spleen was enlarged and tender. The pulse was slow (52) and the axillary temperature was 97·3°. An aperient was given but it was vomited and produced no action of the bowels. On the sixteenth day the icteric tint involved the whole skin and the discolouration of the conjunctivæ was more marked. Vomiting had become more frequent and the intolerance of the stomach was absolute, all liquids being rejected. The hepatic and splenic regions were very painful, with a maximum in the region of the gall-bladder, which organ appeared to be enlarged. The temperature and pulse remained the same. An injection of 1000 grammes of saline solution was ordered in order to provoke diuresis, as the kidneys had ceased to act since the previous day. In the evening the general condition seemed to have improved. Vomiting had occurred only once during the day. 80 grammes of brownish-red urine containing one gramme of albumin per litre and abundance of biliary pigments had been passed. The patient continued to be very prostrate and spoke of his approaching death. In the night the vomiting recurred and was uncontrollable. At first the vomit was black, then it gradually became sanguineous. There was also constipation. On the seventeenth day the hæmatemesis was incessant and the patient lost consciousness. The pulse rose to 120 and the temperature to 101·5° and the jaundice increased in depth. Death occurred on this day. At the necropsy all the tissues had an icteric tinge. The liver did not appear to be enlarged but it was much congested; on section it looked like a "cardiac liver." Some lobules seemed to be in a state of incipient degeneration. The gall-bladder was voluminous and œdematous. This œdema extended as far as the beginning of the common bile duct where an enlarged gland pressed on the latter and appeared mechanically to produce the œdema of the gall-bladder and the icterus. The bile in the gall-bladder was brownish, thick, and very viscid. The stomach contained black fluid; its mucous membrane was spotted with fine ecchymoses which extended as far as the first part of the duodenum. The pancreas was greatly enlarged, œdematous, and congested. It weighed 190 grammes and was of a reddish-grey colour. All the region around the pancreas, the duodenum, and the hilum of the liver contained a large number of swollen lymphatic glands. The spleen was enlarged and weighed 1200 grammes. The kidneys were a little congested and the capsules were adherent in places. Microscopic examination of the liver showed proliferation of the connective tissue surrounding the biliary canaliculi and a number of nodules composed of embryonic cells. The spleen also contained nodules of embryonic cells and its capsule and trabeculæ were thickened. In the kidneys lesions were limited to the convoluted tubes, the cells of which showed signs of granulo-fatty degeneration and the lumen of which was filled with epithelial débris. The cells and acini of the pancreas were abnormally large but the islands of Langerhans were diminished, being compressed by the turgescent tubes. The nuclei of the pancreatic cells stained badly and many of them were vesicular. The complexity of this case is noteworthy. Not only was there epigastric pain which was the principal symptom of the pancreatitis, but the gall-bladder was tender and the spleen was enlarged and tender. The symptoms of grave icterus—hæmatemesis, prostration, subnormal temperature, and elevation of temperature at the time of death—developed. The embryonic nodules found in the liver and spleen and the cellular degenerations are common to all infectious processes. Were these lesions due to the infection of mumps or were they the result of a biliary infection consecutive to the obstruction of the bile duct by the enlarged pancreatic lymphatic glands? The early appearance of the icterus in the case is in favour of the former hypothesis.

[1] THE LANCET, Sept. 12th, 1903, p. 772.

MEDICAL APPOINTMENT TO THE METROPOLITAN WATER BOARD.

Dr. Alexander Cruikshank Houston has been appointed to the important post of director of water examinations, Metropolitan Water Board, at a salary of £1000 per annum. Dr. Houston is an Edinburgh graduate and took the degrees of M.B., C.M., in 1889; B.Sc. (Public Health) in 1891; and D.Sc. (Public Health) in 1892, being awarded the Gunning Victoria Jubilee Alison prize in public health and medical jurisprudence in the same year. During the past 12 years he has carried out special chemical and bacteriological researches in relation to water-supply for the Local Government Board. His investigations on the subject of lead poisoning by moorland waters (1893–97) are well known and have received favourable notice in our columns. During recent years his work for the Local Government Board has attracted considerable attention, both in this country and abroad, and his reports on the

bacteriology of soils, water, sewage, and the excrement of man and the lower animals have been widely read and appreciated. Dr. Houston has also carried out extensive researches for the London County Council on water-supply, watercress pollution, milk-supply, and disinfection; and from 1898 to 1900 he acted as bacteriologist to the main drainage committee of the Council in connexion with the purification of sewage at Barking and Crossness. During the last five years he has held the important post of bacteriologist to the Royal Commission on Sewage Disposal and has written valuable reports on the land treatment of sewage, the bacteriology of oysters and estuarial waters, and other public health subjects. Dr. Houston has frequently been called in to carry out special investigations for public bodies, his recent experiments on the sterilisation of the Lincoln water-supply being a case in point. No one has devoted more time and labour to the serious and complex problems connected with water-supply than has Dr. Houston and we have on numerous occasions pointed out the value of his work. The Metropolitan Water Board and the consumers of London water are to be congratulated on Dr. Houston's appointment to the most important "water post" that has ever been made either in this country or abroad.

EFFECT OF SNAKE POISON ON TRYPANOSOMATA.

Dr. Goebel of the Ghent University Institute of Hygiene and Bacteriology publishes in *La Belgique Médicale* an account of some researches on the effect of cobra poison on trypanosomata. He found that it destroyed them very rapidly at the temperature of the body but much less so at the ordinary temperature of the laboratory, while at zero (C.) it exerted practically no action at all. The effect produced was much the same as that which occurs when cobra poison is brought into contact with the red corpuscles of the blood and the dose required appears to be about the same. Dr. Goebel thinks that there is a singular analogy between the osmotic properties of trypanosomata and red corpuscles.

PERITONITIS IN TYPHOID FEVER DUE TO RUPTURE OF A CHRONIC PYOSALPINX INFECTED BY THE TYPHOID BACILLUS.

IN the *Boston Medical and Surgical Journal* of July 20th Dr. C. L. Scudder has reported a case of peritonitis in typhoid fever due to an unusual cause—rupture of a chronic pyosalpinx acutely infected by the typhoid bacillus. A married woman, aged 38 years, was admitted into hospital on May 20th. About four weeks previously she was taken ill with malaise, cramps in the abdomen, and diarrhœa. She took to bed on the 15th. Excepting the illnesses of childhood she had always been well previously. On admission the abdomen was distended, tympanitic, and somewhat rigid. The temperature was 102·2° F., the pulse was 102, the respirations were 32, and the leucocytes were 9900. On the 22nd rose spots were observed and on the following day the Widal reaction was obtained. On June 5th the temperature was nearly normal and the patient was very comfortable. At 6.30 A.M. on June 8th after a normal action of the bowels she was seized with severe pain in the abdomen, principally in the lower part. After this attack the abdomen was rigid and tender in that region. A chill followed and the temperature rose to 103·6° F. Slight moveable dulness was found in the flanks. The rigidity increased and the number of leucocytes rose from 9000 to 18,000. At noon the temperature was 105° and the pulse was 130. Vaginal examination showed in the left fornix fulness and increased resistance, with a suggestion of bogginess. Laparotomy was performed and thick puriform fluid was found throughout the abdomen. The fluid had not a fæcal odour and there was no gas in the peritoneal cavity. The appendix was normal. The ileum was examined for several feet above the cæcum but no perforation was found. On exploring the pelvis, where the pus was most abundant, a left pyosalpinx was found. It corresponded to the tumour felt per vaginam. The salpingitis was chronic; the wall of the sac was thick and œdematous and had ruptured, allowing the escape of its contents into the peritoneal cavity. Salpingectomy was performed. The abdomen was flushed with saline solution and a gauze wick and drainage tubes were placed in the pelvis. Recovery followed. The walls of the tube which was removed were covered with exudation which on microscopic examination showed a fibrous structure and round cell infiltration. The tube yielded a culture of the typhoid bacillus.

UNILATERAL PROPTOSIS AND ŒDEMA OF THE LIDS IN SCARLET FEVER.

IN the *Ophthalmoscope* for May Mr. Louis Werner has reported a case of scarlet fever attended by an unusual complication—unilateral proptosis and œdema of the lids, probably due to thrombosis of the cavernous sinus. The patient was a boy, aged six years, who made good progress until the ninth day of an attack of scarlet fever. Then the temperature, which had been normal for two days, rose to 101·4° F. and he became drowsy. The right eye was prominent and the lids were swollen and red. There was no congestion of the conjunctiva. In a few days the temperature returned to normal but the ocular symptoms persisted. Mr. Werner was asked to see the case. On examination there was a bright red blush over the upper lid only. The lids were swollen and œdematous, especially the upper lid. The swelling was not tense or indurated and the boy could keep the eye open. No enlarged veins were visible but the lower lid was slightly bluish. Proptosis was very evident. The cornea was clear and the pupil normal in size and reaction. Unfortunately, an ophthalmoscopic examination was not then possible but a few days later, when further improvement had taken place, the fundus was found to be normal. For some weeks slight swelling of the lids occurred at variable intervals. It then disappeared but the proptosis persisted for two months. Complete recovery took place. Orbital complications are very rare in scarlet fever. A few cases of orbital cellulitis with proptosis have been observed and a case of periostitis has been recorded. Dr. Sidney P. Phillips reported three cases of unilateral œdema of the eyelids in scarlet fever complicated by otitis media. The œdema improved concurrently with the otitis media. Dr. Phillips attributed the œdema to thrombosis of the cavernous sinus and Mr. Werner adopts the same hypothesis in his case. Thrombosis might, of course, result from otitis media but primary thrombosis is also possible. Sir William R. Gowers says that primary thrombosis of the cerebral sinuses occurs most frequently in children and may follow any prostrating malady, including the specific fevers. Mr. Werner's patient was very anæmic and debilitated. The interesting points in the case are the absence of otitis media, the long duration of the proptosis after the subsidence of acute symptoms, and the complete recovery without suppuration.

THE UNIVERSITY OF MELBOURNE.

THE University of Melbourne is inviting applications for a new professorship of anatomy, with a salary of £900 per annum and £80 per annum for insurance. Professor H. B. Allen, who has hitherto held the combined chairs of anatomy and pathology, retains the professorship of pathology.

WE regret to announce the death of Dr. John William Ogle, consulting physician to St. George's Hospital, which occurred on August 8th. We hope to publish an extended notice of his career in a future issue.

BRITISH PHARMACEUTICAL CONFERENCE.

THE forty-second annual meeting of the British Pharmaceutical Conference was held at the Hôtel Métropole, Brighton, from July 24th to 28th. This conference is solely concerned with the encouragement of pharmaceutical research and the promotion of friendly intercourse and union amongst pharmacists. It thus differs from the Pharmaceutical Society of Great Britain which is a statutory body charged with the administration of the Pharmacy Acts and the examination and registration of those who desire to be registered under these Acts. The members of the conference were received by the Mayor of Brighton at the Royal Pavilion on July 24th and on the following morning the President, Mr. W. A. H. Naylor, F.I.C., of London, delivered an address[1] on the Standardisation and Storage of Drugs after which the reading and the discussion of communications arising from researches were commenced. The conference was attended by nearly 300 pharmacists and many ladies from all parts of the United Kingdom, together with several colonial pharmacists. Excellent arrangements had been made by the pharmacists of Brighton and Eastbourne to render the meeting a social success, the round of amusements including dances, smoking concerts, drives, a trip by sea to Eastbourne, and a whole day excursion to Arundel, the magnificent Sussex seat of the Duke of Norfolk.

Of the 20 papers read before the conference the majority were of purely pharmaceutical interest. The remainder possessed some medical interest, particularly a paper by Professor W. E. DIXON on

The Physiological Standardisation of Drugs, including a Suggested Physiological Standard for Insertion in the next British Pharmacopœia.

Professor Dixon dealt with certain drugs—e.g., ergot, cannabis indica, lobelia, grindelia, hemlock, and the digitalis group, including digitalis, strophanthus, and squill—for all of which there was at present no trustworthy chemical method of analysis. For such drugs the biochemical method of determining the strength was applicable and should be resorted to in order to obtain galenical preparations having a fixity of strength. The drugs which especially required standardising were the members of the digitalis group, ergot, and cannabis indica. It was necessary to apply biochemical tests to the lower animals owing to the difficulty of recognising small effects in man and the danger of the experiments involved. The principal difference in the action of drugs on man and animals occurred with those remedies which attacked the central nervous system. This point was made clear in a table which showed the degree of development of the brain in different animals and the amount of cocaine required to produce convulsions:—

Animal.	Grammes of brain per kilogramme of animal.	Dose in grammes of cocaine per kilogramme of animal required to produce convulsions.
Rabbit	4	0·18
Guinea-pig	7	0·07
Pigeon	8	0·06
Dog	9	0·02
Ape	18	0·012

But on other tissues the difference was not apparent. If a drug attacked the heart of a man in a certain way it attacked the heart of every mammal in precisely the same way; or if the attack was upon glands the type of action was constant in all mammalia. To take one example of this, secretin was a remedy prepared from the duodenum; it increased the flow of pancreatic juice as was the case with no other drug. But secretin prepared from man or dog had precisely the same effect on the pancreas of every vertebrate throughout the animal kingdom, including that of the frog. The principal objection to this type of experiment was that the reagent—namely, the animal—was too sensitive, so that changes in the conditions under which the experiments were performed might lead to some error. However, if due precautions were taken to keep the conditions of experiment as constant as possible this method of standardisation was wonderfully accurate. The members of the digitalis group might be standardised on male frogs, weighing about 25 grammes each. A tincture of the drug to be standardised was diluted with an equal volume of water and injected into the dorsal lymph sac. Six minims of the diluted tincture should kill the frog by stoppage of the heart within an hour. Professor Dixon proposed that three minims should form the standard unit and that all tinctures of digitalis should bear a label stating how many minims went to the unit. Supposing it was found that five minims of a diluted tincture was the maximum lethal dose then this tincture should be diluted with water to bring it down to the standard. If, however, eight minims of a diluted tincture formed the maximum lethal dose then the label should state that the unit corresponded to four minims instead of three minims. This did not necessarily mean that a prescription containing digitalis should differ in any way from a present-day prescription, but the quantities prescribed by the physician would refer to standardised tincture. If the chemist's tincture was not of standard strength he could by a simple proportion sum calculate the necessary quantity of his tincture to correspond to the quantity prescribed. Tincture of strophanthus was invariably more toxic than that of digitalis. In treatises on medicine it was stated that in certain cases of cardiac disease where digitalis failed to give relief strophanthus might succeed. The explanation was that strophanthus preparations were more powerful than those of digitalis and were absorbed more quickly into the system. But as tincture of strophanthus had the same dose as that of digitalis it should have an equal toxicity. It might be standardised in precisely the same way as digitalis. This would generally require the dilution of the tincture as at present prepared to bring it down to the same standard. Tincture of squill might be standardised in the same way. It was usually a little less toxic than digitalis. This method of assaying could be controlled still more accurately upon rabbits and it was generally advisable that such control experiments should be performed. Professor Dixon deferred the publication of the details of these experiments till later, as well as the methods of standardising the other preparations of this group. Ergot was another drug that varied enormously in its activity. Professor Dixon recently obtained six specimens of the liquid extract from six different sources. Two of these were moderately active, two possessed a feeble action, and the remaining two either had no action at all or their effect was so feeble as to be absolutely worthless for therapeutic use. At the present time the only method of standardising ergot that had been adopted was the injection of the drug into roosters. If the dose was sufficiently large they developed gangrene on the comb and wattles after the necessary interval of time. This method was open to several objections, of which the most important, perhaps, was the difficulty of determining the miminal dose that would produce gangrene. In the opinion of Professor Dixon it was doubtful whether the production of gangrene was in any way proportional to, or indicative of, the therapeutic action required when ergot was administered. The gangrene was not due to simple constriction of the vessels but to a secondary degeneration of the vessels which resulted in the complete blocking of the arterioles. Professor Dixon found, however, that the rise in blood pressure in mammals was proportional to the effect of ergot upon the uterus. This rise was mainly due to constriction of the vessels. Hence, by measuring the increase of blood pressure under fixed conditions they possessed a method of standardisation which was rapid, trustworthy, and proportional both to the vaso-constriction and the effect on the uterus, which were the two principal uses of ergot in therapeutics. The experiments should be performed on rabbits, conforming as nearly as possible to a standard weight and anæsthetised with urethane, of which 1·25 grammes per kilogramme body-weight were necessary to complete anæsthesia. In this way all the disturbing influences of a volatile anæsthetic were avoided. The blood pressure might be taken from the carotid artery and the liquid extract of ergot injected into the femoral vein. The injection should occupy a definite fixed time and the fluid should be at the temperature of the body. Experiments performed in this way afforded a sure method of determining to a fine degree of accuracy the relative activity of different specimens of ergot. Professor

[1] Vide THE LANCET, July 29th, 1905, p. 304.

Dixon deferred to a future communication suggestions as to the exact amount of ergot necessary to produce the standard rise in blood pressure. Cannabis indica was another drug which varied greatly in toxicity, owing to the varying climatic conditions in which the plant was grown. It could not be assayed on animals with the same degree of accuracy as the drugs previously mentioned because the action was on the central nervous system and because the degree of action must be gauged by the experimenter and could not be recorded. The tincture should be diluted with an equal volume of water and ten minims injected subcutaneously into a cat about two and a half kilogrammes in weight. In an ordinarily active sample this animal soon began to show physical signs of intoxication. The pupils dilated, the reflexes were increased, and the gait became exceedingly awkward, the animal rolling from side to side and showing other signs of incoördination. Quite a number of tinctures on the market, even in four times this dosage, produced no effect at all, whilst a few others produced a greater degree of intoxication. Lobelia could be standardised very accurately by its effect upon blood pressure and its subsequent paralytic action on certain nerve cells. Professor Dixon had often found lobeline, like many of the so-called active principles derived from digitalis, to be quite inactive. In the case of opium it might occasionally be necessary to test for the presence of excessive amounts of alkaloids other than morphine. It was well known that some specimens of opium produced excitement and increased reflexes due to the presence of excessive quantities of narcotine. In such cases the injection of the opium into a frog led very quickly to convulsions and afforded a test of the usefulness of the opium. In conclusion Professor Dixon pointed out that pharmacological methods of standardisation should only be resorted to when chemical methods were inadequate. In the examples given it was the only method available.

A paper was read by MR. STANLEY READ, L.D.S. R.C.S. Eng., on

The Composition of Dentifrices as affected by Recent Investigation in Dental Science.

Mr. Read in his paper put forward the view, based on the researches of Dr. Miller of Berlin, that the use of antiseptic substances in dentifrices was wrong in principle as they were likely to destroy the protective bacteria which were normally present in the mouth as well as those which produced dental caries. On this view a dentifrice was regarded merely as a mechanical agent for removing stains.

Mr. D. B. DOTT, F.I.C., contributed a paper on

Mercuric Zinc Cyanide.

Mr. Dott drew attention to the variableness of this substance and gave reasons for believing that it was not a definite compound. He suggested the adoption of an arbitrary standard of strength, say 20 per cent. of mercuric cyanide.

Mr. W. HARRISON MARTINDALE, Ph.D. Marburg, gave an interesting summary of

Recent Work on Radio-activity.

This paper included an account of experiments which had been made on the internal use of radium for therapeutic purposes. Other radio-active salts, notably those of uranium and thorium, which had the advantage of comparative cheapness, were dealt with by Dr. Martindale.

A valuable paper was contributed by Mr. A. W. GERRARD, dealing with

Capsicum and its Preparations.

This paper was mainly of pharmaceutical interest but one important fact may be referred to—viz., that alcohol was the best solvent of the active constituents of capsicum.

Another interesting paper read at the conference was a preliminary communication from Mr. H. FINNEMORE, A.I.C., and Mr. H. DEANE, B.Sc., A.I.C., entitled

Castor Oil (Part I.).

This paper consisted of a summary of work that had been done on castor oil by previous investigators. From this it appeared that the therapeutic activity of the oil was due to the fatty acids.

Mr. H. WIPPELL GADD, F.C.S., read a preliminary paper on

The Chemistry and Pharmacy of the Leaves of Viola Odorata.

From the experiments described in the paper Mr. Gadd concluded that any therapeutic activity which violet leaves might possess was due either to a glucoside or to the products of its decomposition or to a natural ferment associated with it. About three and a quarter ounces of the leaves were infused in a pint of boiling water and the infusion taken internally or applied externally as a fomentation. The leaves which were most sought after at the present time were those of a cultivated variety of the *odorata* group and known to horticulturists as the "Princess of Wales." He found that this variety had a stronger taste than the wild violets possess.

In a discussion which followed the reading of this paper Mr. G. CLARIDGE DRUCE, M.A. Oxon., curator of the botanic gardens at Oxford, pointed out that the reputation of violets for the treatment of malignant growths was founded on the use of wild violets at least as far back as the days of James I. It was desirable, therefore, that in any inquiry into the subject wild violets should be used, such as had been used for centuries, and not a recent cultivated variety as was employed at the present time.

MEDICINE AND THE LAW.

The Cheap Pistol Again.

SINCE the passing of the Pistols Act, 1903, accidents of a dangerous or fatal character resulting from boys playing with revolvers bought in toy shops have no doubt been less frequent than formerly and crimes perpetrated with weapons which anyone could buy without restriction for a few shillings may have diminished in number. At the same time neither of these two classes of avoidable death and injury can be said to have disappeared and in instances where shopkeepers have been prosecuted for not complying with the terms of the Act their usual excuse has been ignorance of the law, which may not be a legal defence but which usually serves to mitigate the penalty imposed. At Bow-street recently, for example, a shopkeeper in the Euston-road pleaded ignorance of the law when summoned for selling a revolver to a boy under the age of 18 years. This youth, who was aged 14½ years, had been told that he must have a licence and had gone to the nearest post-office where he obtained one without difficulty, which points to an omission in safeguarding the public. Many lads under 18 years of age shoot but there can be no reason why their licences should be supplied directly to them instead of on the authority and responsibility of a parent or guardian. The lad then proceeded to write to the Commissioner of Police and to ask that authority whether he would be justified in shooting anyone who insulted him. His letter, which might suggest somewhat unusual mental conditions, had the effect of provoking inquiry and the prosecution was instituted, with the result that the vendor of the pistol was fined 40*s.* with costs. Apparently he was aware of the need for a licence on the part of the customer but did not know of the age limit. Surely, however, there is no reason why it should not be impossible for any tradesman even to suggest ignorance of a law which particularly affects himself. Every shopkeeper's door must be passed by a policeman from time to time and a warning given by the police would readily afford information as to an Act of this kind within a day or two of its being passed, while the statute itself only occupies a couple of printed pages and a copy of it costs 1*d.* or 1½*d.* Moreover, it provides for the keeping of a book in which the sale of pistols is to be recorded and this is open to inspection by any officer of the police or of the inland revenue. The Act must necessarily be useless if no effort is made to enforce it until a breach of it is brought to the notice of the authorities.

Common Lodging-houses further Defined.

The appeal in the case of Gilbert *v.* Jones, heard by the Lord Chief Justice, Mr. Justice Lawrance, and Mr. Justice Ridley in the Divisional Court on August 2nd, will strengthen the hands of local authorities in dealing with certain charitable institutions which at any time might have become otherwise a source of danger to the health of the community. The decision will affect one or two other prosecutions which have been adjourned in order to await it, the facts being that Father Gilbert, a benevolent Roman Catholic clergyman, had opened a night refuge for the most destitute classes of the community without obtaining a licence as for a common lodging-house. There was no suggestion that the house was not admirably conducted from a sanitary point of view but the London County Council maintained

that institutions of this class must under the law be licensed as common lodging-houses and as such subject to inspection, it being obvious that if improperly kept from a sanitary point of view the circumstance that no payment was taken from the inmates would make no difference to the probability of the spread of disease. The only point raised by the appellant, who had been convicted by Mr. Cluer of the offence alleged, consisted in the absence of all payment. It was held once upon a time in the case of Salvation Army shelters, where a small sum was charged but where no profit was made by the army, that these were not common lodging-houses; this, however, had been overruled long before Mr. Gilbert appealed by a court over which Lord Russell of Killowen presided. The court therefore had to decide whether there was any distinction to be made between a night refuge or lodging house where the lodgers paid a trifle, as in the case of the Salvation Army refuges, and one in which there was no charge made of any kind, and in which, as was quite fairly argued, the lodgers might be looked upon as the guests of those maintaining the institution. Lord Alverstone delivered the judgment of the court upholding the conviction. He was unable to draw the distinction which he was invited to, between the charitable house where a small payment was exacted and that in which there was none at all, and he pointed out that the decision involved no interference whatever with any charitable work carried out under proper sanitary conditions. In dismissing the appeal he granted an application for costs on behalf of the London County Council who, as Mr. Avory, K.C., put it, were, in fact, the ratepayers of London and none should question the justice of this. It is unreasonable of charitable persons dealing with difficult social and sanitary problems to maintain that because their own work is beyond reproach they, and with them others who may be less scrupulous, should be beyond the reach of all criticism. Certainly they have no right to expect to have their errors of judgment paid for by the ratepayers.

Accident or Disease?

The Workmen's Compensation Acts, as lawyers have good reason gratefully to remember, while providing for the payment of compensation to workmen incapacitated by "accident" omitted to define the manner in which this word was to be interpreted. Such mishaps as rupture when lifting heavy weights and infection with anthrax have been declared at various times to be "accidents," and the tendency has no doubt been to extend the meaning of the word beyond the sense in which it is used in everyday life. At Bloomsbury county court recently a man claimed as for an accident compensation for his loss of employment when affected by caisson disease, the defendants being the contractors for the new tube railway from Charing Cross to Hampstead. Judge Bacon, after hearing argument and the authorities upon the subject, refused to hold that caisson disease was an accident but presumably the Court of Appeal and possibly the House of Lords will be asked to review his decision. It would be interesting to ascertain the legal expenses that might have been saved by a fuller definition in the original Bill upon this point alone. The question is of some interest to medical men who are the most important witnesses in compensation cases of this kind and who naturally find it useful to know when treating a case whether they will some day have to depose to symptoms and treatment in a court of law.

LITERARY INTELLIGENCE.—A work on Criminal Responsibility will shortly be issued from the Oxford University Press. The author is Dr. Charles A. Mercier and the book is intended to complement that by Sir FitzJames Stephen. Dr. Mercier points out that the question of criminal responsibility should be considered anew by a psychologist—Sir FitzJames Stephen was handicapped by insufficient knowledge of the work of the mind in health and disease—and that in 20 years our knowledge of insanity has advanced.—A book is to be published in the autumn by the De La More Press entitled "A First German Course for Science Students," and written by Professor H. G. Fiedler and Dr. F. E. Sandbach. The book assumes no previous knowledge of German and consists of German passages, the vocabulary of which is strictly scientific. It is printed in the English characters and illustrated and contains a brief outline of grammar and a vocabulary.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

On the General Sanitary Circumstances and Administration with Special Reference to Infectious Diseases of the County Borough of Hanley, by Dr. S. MONCKTON COPEMAN.[1]—The borough of Hanley (population 63,889) in the Staffordshire pottery district presents several interesting problems in public health administration. On the question of housing Dr. Copeman shows that although there is sufficient accommodation for the working classes who are able and willing to pay for it, much difficulty arises with regard to a considerable proportion of the poorest class, largely Irish, who apparently cannot afford to pay a higher rent than 2*s.* 6*d.* a week. People of the latter class inhabit a set of areas which are extremely insanitary in their condition but with which it is evidently not easy to deal under the Housing of the Working Classes Acts. Proposals for municipal dwellings for the very poor have been made but it would probably be found impossible to supply such dwellings without entailing a considerable burden on the local rates. Another special difficulty in Hanley results from the frequent subsidences of the surface of the ground on which the town is built, due to sinking of old mine workings. In some instances water mains have been broken from this cause and bacteriological evidence has been obtained that objectionable pollution of the water supplied to certain areas of the borough has resulted from the fractures. For similar reasons sewers often need renovation or repair. In the course of five years it has been necessary to open up sewers for repairs of one or another kind as often as 704 times and on several occasions the sewers in question have had to be relaid wholly or to be abandoned in consequence of the extent of the settlement. Gas mains are also frequently affected by these subsidences. The steepness of gradients in certain of the sewers has rendered them liable to damage from excessive pressure in time of rain. A complete "separate system," dealing with storm water by separate sewers, is now contemplated. Large new works of sewage disposal by means of tanks and continuous filters are being constructed. House drainage is often defective, the pipes until a few years ago having been jointed merely with clay. Another serious defect in the borough consists in the accumulations of house refuse which are allowed to take place in the numerous large middens. Where moveable ashbins have been provided their contents are emptied not more often than once a week. Frequently in the process of emptying receptacles for house refuse it is necessary to carry the refuse through the living rooms of the house, while it is a common practice to dump the collected material in heaps either in the street or alongside the footpaths to await the arrival of the scavenger's cart. "This method," Dr. Copeman observes, "would be sufficiently objectionable were the process carried on early in the morning. But it not unfrequently happens, as I was informed, that the cart may make its rounds in the busiest hours of the day or at a time when children are playing about in the streets between school hours." Various methods of disposal of excrement exist—Rochdale pails, Duckett's and Fowler's slop-water closets, cesspit privies, and water-closets with or without flushing cisterns. The supply of water to closets which possess flushing apparatus is often cut off by the water company for non-payment of rates and in consequence a great many flushing cisterns have fallen into disuse. Dr. Copeman draws attention to the advantage of the Hanley public abattoir and considers that it would be a most desirable reform to enlarge it and to abolish the private slaughter-houses which still exist in the borough. For some years the general death-rate in Hanley has remained at a higher figure than the average for the 76 greater towns included in the Registrar-General's weekly returns and the same has been true for the infantile mortality. To a large extent this higher death-rate has been due to continued

[1] London: Wyman and Sons, Fetter-lane. Edinburgh: Oliver and Boyd. Dublin: E. Ponsonby. No. 217. Price 1*s.* 6*d.*

and excessive prevalence of infectious diseases—diphtheria, enteric fever, measles, and summer diarrhœa—during recent years. The heavy infantile mortality, in the opinion of Mr. J. Clare, the borough medical officer of health, is attributable to the excessive employment of adult female labour in the Potteries, which leads to bad feeding by hand and to many children being put out to nurse. Dr. Copeman points out the various ways in which the pollution of soil in the neighbourhood of the dwellings probably conduces to the propagation of the infection of summer diarrhœa and of enteric fever. Between 200 and 500 cases of diphtheria have been reported annually since 1899 and the average case mortality from this disease during the past six years is no less than 20 per cent. Dr. Copeman discusses the share of schools in spreading infection and draws attention to the manner in which epidemic diphtheria in recent years has slowly spread from one to another of the adjoining townships in the Potteries. In making recommendations attention is drawn to the need for revision of by-laws and the report states that the long delay in dealing with this matter has been largely due to overwork of the borough surveyor who in addition to his numerous other duties has been acting as engineer to the new electrical installation of the borough. Municipal enterprise in such matters as electric light may be well enough but obviously it should not be so indulged in as to encourage neglect of important measures of public health. Hanley has the population and the dignity of a county borough and Dr. Copeman strongly recommends that the town council should follow the example of the majority of such boroughs and pay a salary to its medical officer of health which will enable him to devote the greater part of his time to official duties. This step would obviously place the sanitary service of the town in a much better position for effective work than it at present occupies.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 8719 births and 5080 deaths were registered during the week ending August 5th. The annual rate of mortality, which had been 12·9, 13·4, and 15·0 per 1000 in the three preceding weeks, further rose last week to 17·0 per 1000. In London the death-rate was 15·6 per 1000, while it averaged 17·6 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 6·0 in King's Norton, 7·4 in Hornsey and in Reading, 7·6 in Handsworth (Staffs), 7·9 in Bournemouth, 9·0 in Walthamstow, in Northampton, and in Great Yarmouth, 9·2 in Croydon, and 9·6 in Leyton; the highest rates were 22·8 in West Ham, 22·9 in Warrington, 23·2 in St. Helens, 23·5 in Wigan, 23·7 in Grimsby, 24·1 in Bootle, 24·3 in Tynemouth, 24·4 in Stockport, 26·9 in West Bromwich, 28·4 in Sheffield, and 62·2 in Rhondda.[1] The 5080 deaths in these towns last week included 1507 which were referred to the principal infectious diseases, against 486, 612, and 1101 in the three preceding weeks; of these 1507 deaths, 1247 resulted from diarrhœa, 77 from whooping-cough, 71 from measles, 44 from diphtheria, 39 from scarlet fever, 28 from "fever," and one from small-pox. No death from any of these diseases was registered last week in Burton-on-Trent, and while Croydon, Hornsey, Hastings, Brighton, Bournemouth, King's Norton, Bury, Swansea had low death-rates from the principal infectious diseases, the highest rates were recorded in West Ham, Grimsby, Birkenhead, Liverpool, Bootle, Wigan, Sheffield, and Rhondda. The greatest proportional mortality from measles occurred in Barrow-in-Furness,; from scarlet fever in Blackburn; from whooping-cough in West Ham, Oldham, and Rhondda; and from diarrhœa in West Ham, Grimsby, Birkenhead, Liverpool, Bootle, Wigan, Sheffield, and Rhondda. The mortality from diphtheria and from "fever" showed no marked excess in any of the large towns. One fatal case of small-pox was registered in Birmingham but none in any other of the 76 towns. The number of small-pox cases remaining under treatment in the Metropolitan Asylums Hospitals, which had been four, three, and three at the end of the three preceding weeks, was two at the end of last week; three new cases were admitted during the week, against two, none, and none in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday last, August 5th, was 2632, against 2520, 2485, and 2550 on the three preceding Saturdays; 366 new cases were admitted during the week, against 356, 304, and 352 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 104, 117, and 116 in the three preceding weeks, fell to 111 last week, and were one below the number in the corresponding period of last year. The causes of 46, or 0·9 per cent., of the deaths in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Portsmouth, Bristol, Salford, Leeds, and in 47 other smaller towns; while the largest proportions of uncertified deaths were registered in Birmingham, Leicester, Liverpool, Manchester, Sheffield, Gateshead, and Newcastle-on-Tyne.

[1] Excluding 79 deaths due to the colliery explosion at Wattstown, the death-rate in Rhondda during the week would have been 29·2.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 14·3, 15·2, and 15·3 per 1000 in the three preceding weeks, fell to 14·8 per 1000 during the week ending August 5th, and was 2·2 per 1000 below the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 8·7 in Aberdeen and 10·2 in Leith to 16·8 in Perth and 18·3 in Paisley. The 496 deaths in these towns last week included 59 which were referred to diarrhœa, 15 to measles, 14 to whooping-cough, two each to scarlet fever, diphtheria, and "fever," but none to small-pox. In all 94 deaths resulted from these principal infectious diseases last week, against 55, 61, and 66 in the three preceding weeks. These 94 deaths were equal to an annual rate of 2·8 per 1000, which was 2·2 per 1000 below the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of diarrhœa, which had been 7·22 and 39, further rose last week to 59, of which 36 occurred in Glasgow, nine in Edinburgh, and four in Leith. The deaths from whooping-cough, which had been 25, 12, and 14 in the three preceding weeks, were again 14 last week, and included five in Edinburgh, four in Glasgow, and two in Dundee. The fatal cases of measles, which had been 19, 21, and eight in the three preceding weeks, rose to 15 last week, of which ten were registered in Glasgow and two in Edinburgh. The deaths from diphtheria, which had been one, three, and five in the three preceding weeks, declined to two last week, both deaths having occurred in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 65, 62, and 70 in the three preceding weeks, fell last week to 48, and were one in excess of the number in the corresponding period of last year. The causes of 13, or 2·6 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 19·7, 20·1, and 20·8 per 1000 in the three preceding weeks, further rose to 21·2 per 1000 during the week ending August 5th. During the past four weeks the death-rate has averaged 20·5 per 1000, the rates during the same period being 13·6 in London and 15·9 in Edinburgh. The 154 deaths of persons belonging to Dublin registered during the week under notice were three in excess of the number in the preceding week and included 29 which were referred to the principal infectious diseases, against 17, 20, and 22 in the three preceding weeks; of these, 25 resulted from diarrhœa, two from diphtheria, and two from whooping-cough, but not any from small-pox, measles, scarlet fever, or "fever." These 29 deaths were equal to an annual rate of 4·0 per 1000, the mean rates last week from the principal infectious diseases being 4·2 in London and 2·8 in Edinburgh. The fatal cases of diarrhœa, which had been 14, 18, and 20 in the three preceding weeks, further rose last week to 25. The 154 deaths in Dublin last week included 52 of children under one year of age and 29 of persons aged 60 years and upwards; the deaths of infants exceeded the number in the preceding week by one, and those of elderly persons showed an increase of six deaths. Two inquest cases and three deaths from violence were registered; and 53, or more than a third, of the deaths occurred in public institutions. The causes of seven, or 4·5 per cent., of the deaths registered in Dublin last week were not certified.

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JULY, 1905.

(*Specially compiled for* THE LANCET.)

Cities and Boroughs.	Estimated population in the middle of 1905.	Notified Cases of Infectious Disease.											Deaths from Principal Infectious Diseases.										Deaths from all causes.	Death-rate per 1000 living.	Deaths of Infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON	4,684,794	4	1469	527	—	118	—	16	307	—	2441	6·8	—	91	22	24	78	—	17	1	361	604	1·7	4279	11·9	112
West Districts.																										
Paddington	147,935	—	30	12	—	5	—	—	13	—	60	5·3	—	5	—	—	2	—	1	—	9	17	1·5	113	10·0	98
Kensington	180,083	—	30	14	—	4	—	—	12	—	60	4·3	—	5	—	2	2	—	1	—	9	19	1·4	145	10·5	142
Hammersmith	119,037	—	26	18	—	5	—	—	7	—	56	6·1	—	3	1	—	1	—	1	—	7	13	1·4	91	10·0	105
Fulham	157,210	—	92	18	—	5	—	1	10	—	126	10·4	—	4	2	2	5	—	—	—	20	33	2·7	176	14·6	151
Chelsea	74,498	—	9	7	—	2	—	1	7	—	26	4·5	—	—	1	—	—	—	—	—	3	4	0·7	67	11·7	89
City of Westminster	175,606	—	21	6	—	4	—	2	6	—	39	2·9	—	6	—	—	1	—	—	—	3	10	0·7	149	11·1	87
North Districts.																										
St. Marylebone	129,453	—	17	13	—	5	—	—	12	—	47	4·7	—	3	1	1	2	—	1	1	8	17	1·7	127	12·8	72
Hampstead	88,142	—	20	10	—	1	—	—	4	—	35	5·2	—	1	1	—	—	—	—	—	1	3	0·4	56	8·3	92
St. Pancras	276,183	—	45	20	—	2	—	—	10	—	75	4·1	—	5	—	—	2	—	1	—	11	19	1·0	267	11·4	102
Islington	342,991	1	75	36	—	11	—	1	10	—	134	5·1	—	1	1	3	7	—	3	—	12	27	1·0	253	9·6	95
Stoke Newington	52,828	—	16	10	—	1	—	—	2	—	29	7·2	—	—	—	—	—	—	—	—	—	—	—	48	11·8	117
Hackney	228,479	—	76	35	—	9	—	1	24	—	145	8·3	—	3	—	3	2	—	1	—	27	36	2·1	202	11·5	140
Central Districts.																										
Holborn	56,481	—	2	1	—	2	—	—	2	—	7	1·6	—	1	—	—	—	—	—	—	5	6	1·4	54	12·5	84
Finsbury	93,207	1	34	13	—	8	—	—	7	—	63	8·4	—	6	—	1	3	—	1	—	13	24	3·2	131	17·4	128
City of London	22,425	—	4	—	—	—	—	—	—	—	4	2·3	—	—	—	—	—	—	—	—	1	1	0·6	24	14·0	42
East Districts.																										
Shoreditch	116,565	—	101	8	—	1	—	1	11	—	122	13·6	—	4	1	—	7	—	—	—	48	60	6·7	205	22·9	317
Bethnal Green	130,401	1	65	19	—	3	—	1	14	—	103	10·3	—	1	2	3	2	—	1	—	15	24	2·4	144	14·4	161
Stepney	305,466	—	161	31	—	10	—	2	39	—	243	10·4	—	4	3	1	8	—	4	—	48	68	2·9	329	14·0	116
Poplar	170,230	—	73	68	—	3	—	1	12	—	157	12·0	—	2	3	3	6	—	1	—	21	36	2·8	191	14·6	134
South Districts.																										
Southwark	208,528	—	65	21	—	7	—	2	16	—	111	6·9	—	3	2	2	2	—	1	—	13	23	1·4	197	12·3	112
Bermondsey	129,006	—	43	14	—	2	—	—	10	—	69	7·0	—	3	—	—	2	—	—	—	14	19	1·9	135	13·6	112
Lambeth	313,045	—	86	46	—	7	—	—	19	—	158	6·6	—	5	4	1	9	—	—	—	26	45	1·9	307	12·8	88
Battersea	177,532	—	60	23	—	1	—	1	8	—	93	6·6	—	4	4	—	5	—	—	—	11	24	1·8	140	10·3	97
Wandsworth	265,392	—	84	25	—	8	—	1	16	—	134	6·6	—	11	3	1	4	—	—	—	9	28	1·4	201	9·9	96
Camberwell	271,240	—	105	15	—	3	—	—	15	—	138	6·6	—	3	1	—	2	—	—	—	6	12	0·6	203	9·8	68
Deptford	114,495	1	52	10	—	2	—	1	5	—	71	8·1	—	3	1	—	1	—	—	—	5	10	1·1	114	13·0	96
Greenwich	103,493	—	18	4	—	5	—	—	8	—	35	4·4	—	2	—	—	—	—	—	—	8	10	1·3	86	10·8	110
Lewisham	144,420	—	36	10	—	3	—	—	4	—	52	4·7	—	1	—	1	2	—	—	—	3	7	0·6	76	6·9	58
Woolwich	125,372	—	25	20	—	—	—	—	4	—	49	5·1	—	2	1	—	1	—	—	—	5	9	0·9	108	11·2	75
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

VITAL STATISTICS OF LONDON DURING JULY, 1905.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious disease it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 6·8 per 1000 of the population, estimated at 4,684,794 persons in the middle of the year. In the three preceding months the rates had been 5·6, 6·2, and 6·8 per 1000 respectively. The lowest rates last month were recorded in Kensington, the City of Westminster, St. Pancras, Holborn, the City of London, and Greenwich; while the highest rates occurred in Fulham, Shoreditch, Bethnal Green, Stepney, and Poplar. Small-pox was less prevalent than it had been in the preceding month; of the four cases notified during July one each belonged to Islington, Finsbury, Bethnal Green, and Deptford. The Metropolitan Asylums hospitals contained three small-pox patients at the end of last month, against 16, nine, and four at the end of the three preceding months; the weekly admissions averaged one, against four, two, and two in the three preceding months. The prevalence of scarlet fever was slightly greater than in the preceding month; among the various metropolitan boroughs this disease was proportionally most prevalent in Fulham, Shoreditch, Bethnal Green, Stepney, Poplar, Camberwell, and Deptford. The number of scarlet fever patients in the Metropolitan Asylums hospitals, which had been 2152, 2236, and 2444 at the end of the three preceding months, had further risen to 2527 at the end of last month; the weekly admissions averaged 338, against 266, 302, and 301 in the three preceding months. Diphtheria was slightly less prevalent during July than in the preceding month; the greatest proportional prevalence of this disease occurred in Stoke Newington, Hackney, Stepney, Poplar, and Woolwich. The Metropolitan Asylums hospitals contained 785 diphtheria patients at the end of July, against 719, 694, and 715 at the end of the three preceding months; the weekly admissions averaged 118, against 83, 89, and 111 in the three preceding months. The prevalence of enteric fever was considerably greater than in the preceding month; among the various metropolitan boroughs this disease was proportionally most prevalent in Paddington, Chelsea, St. Marylebone, Hackney, Shoreditch, Bethnal Green, and Stepney. The number of enteric fever patients remaining under treatment in the Metropolitan Asylums hospitals at the end of last month was 94, against 65, 80, and 78 at the end of the three preceding months; the weekly admissions averaged 17, against 11, 14, and 10 in the three preceding months. Erysipelas was proportionally most prevalent in Paddington, Chelsea, St. Marylebone, Hackney, Shoreditch, Bethnal Green, and Stepney. The 16 cases of puerperal fever notified during the month included two in the City of Westminster, two in Stepney, and two in Southwark.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various boroughs, the deaths occurring in public institutions having been distributed among the boroughs in which the deceased persons had previously resided. During the four weeks ending July 29th the deaths of 4279 persons belonging to London were registered, equal to an annual rate of 11·9 per 1000; in the three preceding months the rates had been 15·1, 14·0, and 12·1 per 1000. The rates last month ranged from 6·9 in Lewisham, 8·3 in Hampstead, 9·6 in Islington, 9·8 in Camberwell, and 9·9 in Wandsworth, to 14·0 in the City of London and in Stepney, 14·4 in Bethnal Green, 14·6 in Fulham and in Poplar, 17·4 in Finsbury, and 22·9 in Shoreditch. The 4279 deaths from all causes in London last month included 604 which were referred to the principal infectious diseases; of these, 91 resulted from measles, 32 from scarlet fever, 24 from diphtheria, 78 from whooping-cough, 17 from enteric fever, one from ill-defined pyrexia, and 361 from diarrhœa, but not any from small-pox or from typhus fever. No death from any of these diseases was recorded in Stoke Newington; among the metropolitan boroughs they caused the lowest death-rates in Chelsea, the City of Westminster, Hampstead, the City of London, Camberwell, and Lewisham; and the highest rates in Fulham, Finsbury, Shoreditch, Bethnal Green, Stepney, and Poplar. The 91 deaths from measles were but half of the correct average number; among the various metropolitan boroughs this disease was proportionally most fatal in Paddington, the City of Westminster, Finsbury, Shoreditch, and Wandsworth. The 32 cases of scarlet fever were 14 below the average for the corresponding periods of the ten years; the greatest proportional mortality from this disease occurred in Fulham, Bethnal Green, Poplar, Lambeth, and Battersea. The 24 deaths from diphtheria showed a decline of 97 from the corrected average number; among the various metropolitan boroughs this disease was proportionally most fatal in Kensington, Fulham, Hackney, Bethnal Green, and Poplar. The 78 deaths from whooping-cough were 53 below the average number in the corresponding periods of the ten preceding years; this disease showed the greatest proportional mortality in Fulham, Islington, Finsbury, Shoreditch, Stepney, Poplar, Lambeth, and Battersea. The 18 fatal cases of "fever" showed a decline of 15 from the corrected average number; four of the deaths belonged to Stepney, three to Islington, and two to St. Marylebone. The 361 deaths from diarrhœa were 291 below the average number in the corresponding periods of the ten preceding years; this disease was proportionally most fatal in Fulham, Hackney, Finsbury, Shoreditch, Bethnal Green, Stepney, and Poplar. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases was more than 45 per cent. below the average.

Infant mortality, measured by the proportion of deaths among children under one year of age to registered births, was equal to 112 per 1000. The lowest rates of infant mortality were recorded in St. Marylebone, Holborn, the City of London, Camberwell, Lewisham, and Woolwich; and the highest rates in Kensington, Fulham, Hackney, Finsbury, Shoreditch, and Bethnal Green.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeon E. H. H. de Courtmacsherry, to Royal Naval Engineering College, Keyham. Surgeons: H. F. Iliewicz to the *Powerful*; J. Barry to the *Centurion*; G. E. Kennedy to the *Royal Oak*; A. J. Pickthorn to the *Ocean*; and W. P. Dyer and C. R. Sheward to the *President*, for three months' study at West London Hospital.

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 3rd Kent (Royal Arsenal): Bernard Hudson to be Surgeon-Lieutenant (dated July 8th, 1905).

Rifle: 1st Volunteer Battalion the Suffolk Regiment: Herbert Mayris Sylvester to be Surgeon-Lieutenant (dated August 1st, 1905). 3rd Volunteer Battalion the Bedfordshire Regiment: Surgeon-Captain J. W. Bone resigns his commission (dated August 1st, 1905). 3rd Volunteer Battalion the East Surrey Regiment: Richard William Brimacombe to be Surgeon-Lieutenant (dated August 1st, 1905). 1st Volunteer Battalion the Gordon Highlanders: Surgeon-Major G. M. Edmond resigns his commission (dated August 1st, 1905). The Prince of Wales's Own 12th Middlesex (Civil Service): Acting Surgeon Robert Welsh Branthwaite, Cadet Corps (Civil Service), attached to the Prince of Wales's Own 12th Middlesex (Civil Service) Volunteer Rifle Corps, to be Surgeon-Lieutenant and to be borne as Supernumerary to the Establishment (dated July 31st, 1905). 14th Middlesex (Inns of Court): The undermentioned officer resigns his commission:—Surgeon-Captain F. C. Wallis (dated July 17th, 1905).

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Major A. B Wade to be Surgeon-Lieutenant-Colonel (dated July 29th, 1905) Surgeon-Lieutenant-Colonel D. E. Flinn, having resigned his commission in the Volunteers, ceases to belong to the Army Medical Reserve of Officers (dated August 5th, 1905).

OUR ARMY MEDICAL SERVICE.

The following is an extract from Lord Roberts's address on Imperial defence on August 1st at a special meeting of members of the London Chamber of Commerce at the Mansion House, as reported in the *Times*, August 2nd, 1905:

Alarming as the figures I have quoted are, they only apply to the combatant branch of the army; there are other important branches upon the efficiency of which the success of a campaign in no small degree depends. One very important branch is the medical. There

was a great outcry in this country during the South African war when it became known that the number of medical officers and nurses was insufficient and that there was a lack of proper hospital equipment and appliances. Civil surgeons and nurses were hurriedly entrained, additional field hospitals were despatched, and the timely aid afforded by private persons was eagerly accepted. But the fact remains that for the first few months of the war the medical arrangements were quite unequal to cope with the strain put upon them. For this I do not think anyone can be blamed. Certainly not the medical officers, who were most devoted and untiring in their endeavours to overcome the enormous difficulties with which they had to contend. It had been generally accepted that the maximum strength of any force despatched from this country would not exceed two army corps—say, 75,000 men—whereas the force actually employed amounted to between 300,000 and 400,000 scattered over a vast area with inadequate rail transport, and for the greater part without roads. But it will not be possible on any future occasion to make allowances for failure in the medical arrangements. We have been taught by sad experience that we must be prepared for a much larger force being sent into the field than was contemplated before the South African war and a much larger percentage of disease. Yet at present we are not much better off as regards medical requirements than we were in 1899; for although the Royal Army Medical Corps was increased by 125 officers and 1200 other ranks under Mr. Brodrick's *régime*, out of its own establishment it can now only provide for an expeditionary force 55,000 strong. It has been proposed to supplement the *personnel* by the addition of 45 per cent. of civil surgeons and 37 per cent. of civil subordinates, which would provide for a force 73,000 strong; and certain further proposals have been made by the Advisory Board which if adopted would enable the Royal Army Medical Corps to deal with a force 140,000 strong. But both these proposals are still only under consideration, nothing has been done, and, as matters now stand, the balance of any larger force than 55,000 would have to take the field without any properly trained establishment whatever. No help could possibly be afforded to the army in India, which would be sadly in need of medical aid in the event of a prolonged war.

Correspondence.

"Audi alteram partem."

MISTAKES IN THE DIAGNOSIS OF INFECTIOUS DISEASE.

To the Editors of THE LANCET.

SIRS,—The statement of the chairman of the statistical committee of the Metropolitan Asylums Board last week and the pointed prominence given to it by the press (with respect to the 2000 mistakes and loss of £12,000 of the ratepayers' money), on the face of it implies, and is no doubt intended so to do, a grave reflection on the competency of the London medical men and draws marked attention to their inability to diagnose correctly the various infectious disorders to which they may in their daily round be called and the consequences thereof to the public. I am willing to acknowledge that it is unfortunate so many should have occurred and that not only has the money been to all intents and purposes wasted but also that the patients have been needlessly brought into contact with diseases which they themselves did not suffer from—a much more serious matter than loss of money and time; but is there nothing to be said on behalf of the poor practitioner who is called on suddenly to make an immediate diagnosis of the case and to act on it? As one of these latter, and one whose diagnosis having been reviewed has been found wanting, may I be allowed to plead extenuating circumstances in mitigation of judgment and explain some of the possible circumstances in which some of these errors occur?

The case to which I was called was apparently one of diphtheria and I gather from the general statement in the newspapers that many or most of the errors occurred in diagnosing this disorder. I say apparently it was one of diphtheria, for all the clinical symptoms were identical with those of that disorder. It occurred in the house of a training home for servant girls, with no possible accommodation for isolation. What was one to do? Theoretically one ought to have isolated the patient until one had taken a swab from the throat and had this examined and the diagnosis confirmed or otherwise. In the circumstances, however, I took on myself the responsibility of notifying the case and of having it immediately removed, and with all that I now know (and I have had a very considerable acquaintance with diphtheria) I should in the circumstances assume the risk again, and I have the approval of the medical officer of health for the action. Now, Sirs, not only is there considerable difficulty in the correct recognition of the various membranous sore-throats but since joining the profession (I am sorry to say a good many years ago) the typical symptoms of various of the infectious diseases have been more or less altered. For instance, how rarely now do we meet with the fulminating death-dealing scarlet fever epidemics that used to be prevalent? Scarlet fever is now a mild, almost non-pyrexial exanthem. More frequently than not the child has little or no rash, is perfectly well after a couple of days' slight feverishness, and returns to school in a week. Typhoid fever is now as often accompanied with constipation as with diarrhœa, and small-pox as modified by vaccination is almost unrecognisable except by an expert. In these circumstances mistakes do and will occur, giving cause for the uninitiated layman to blaspheme and the profession to be condemned in consequence. Recognising this fact and that the mistakes are not always due to ignorance alone, what means have we as a profession or what means have the various sanitary bodies for the more effectual checking or stopping of these errors and their results? With the profession, of course, the encouragement of more perfect study of the various infectious disorders and the modifications met with will immediately occur to one. With regard to the various sanitary bodies, the provision of shelters for observation, of some provision for bacteriological investigation, for the examination of slides, for the supply of tubes for Widal reaction, the examination and staining of sputum, the supply of antitoxin (how many have done these?), and lastly, the willing coöperation of the medical officer of health in friendly consultation in difficult cases. With regard to the Metropolitan Asylums Board, could not it provide some observation wards where cases of doubtful nature could remain under observation for a few hours and not be pushed straight into the wards? It must be remembered, too, that cases admitted with one kind of disease have been inoculated with others during their stay in these hospitals, so that errors occur inside as well as outside. To lessen the evil effects of these errors and the disrepute that they bring to the profession must be my excuse for ventilating my protest and urging the necessity of finding a remedy if possible. I am, Sirs, yours faithfully,

Kensington, August 8th, 1905. RICHARD BEVAN.

ANATOMICAL PECULIARITIES OF A GALL-BLADDER.

To the Editors of THE LANCET.

SIRS,—The following may be of interest in connexion with Dr. Ferguson Lemon's case of abnormality of the gall-bladder reported in THE LANCET of May 13th, p. 1265. I had occasion recently to make a necropsy on the body of an Italian who was killed by an explosion of dynamite in a mine in this district. On opening the abdomen I noticed that the gall-bladder was apparently absent. On turning up the liver a slight elevation of the usual colour of the gall-bladder was seen on the under surface of the right lobe about two inches from the anterior border. On incision it proved to be a normally sized gall-bladder containing bile, almost entirely embedded in the liver substance. As in Dr. Lemon's case, the coat of the gall-bladder was marked off very definitely from the liver substance but unlike his case was of normal thickness. The cystic duct ran for some distance through the liver substance, emerged at a small fissure of its own near the transverse fissure, and joined the hepatic duct in the usual situation. The fissuring and lobulation of the liver were most irregular but the gall-bladder, liver, and all other organs were quite healthy.

I am, Sirs, yours faithfully,

H. GERALD LOUGHRAN.

Western Australia, July 7th, 1905.

LONDON SANITATION.

To the Editors of THE LANCET.

SIRS,—I desire to bring under your observation a most objectionable and insanitary practice which takes place on six days of the week during the fruit season in London. Carts bring to Covent Garden Market from the surrounding country baskets of strawberries, other fruits, and vegetables, and return to the country with the empty baskets packed with, and in contact with, horse dung and other manure. I have not the least doubt that these same baskets are again filled up the following day with market produce to be brought to Covent Garden and that the same thing is repeated day after day, the only cleansing that the baskets get being probably a washing with cold water, if even that. This practice may be constantly seen on the roads that lead out of London and more particularly on the Hounslow-road.

I returned from West Africa a few weeks ago and was

amazed to find this state of affairs, which I understand has gone on for at least several years, in the very centre of civilisation, where one would expect to see sanitation made as perfect as possible. It is ridiculous, almost laughable, to visit a hospital and see the elaborate preparations that are made for disinfecting purposes and then to compare it with this filthy custom. Certainly, camels are swallowed, while gnats are strained at, and one is inclined to ask, Where is the sanitary official? I am, Sirs, yours faithfully,

C. B. HUNTER.

Charles-street, St. James's, S.W., August 7th, 1905.

HOMBURG.

THE PROBLEM OF MINERAL WATER HEALTH RESORTS.—WHAT SHOULD, AND WHAT DOES, DETERMINE THEIR POPULARITY.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

PART I.

THE HOMBURG OF THE PAST.

Bad-Homburg, August 1st, 1905.

THERE is no disguising the fact that of late Homburg has been under a cloud—a light, passing cloud, perhaps, but still a cloud. Yet it is also equally evident that Homburg has never before possessed so many resources for the treatment of various and serious diseases. Why with an increase of facilities and advantages there should be a decrease of popularity is a problem for which there is no one all covering reply. Many causes have been at work and among them political estrangements have played their part. Then there are the ever fickle changes of fashion. One year it is thought "good form" or the "proper thing" to go to some well-advertised resort; and at another time it is some other place that comes in vogue. Where it is only a matter of pleasure and pleasure-seekers this fickleness does not do so much harm but when it is a question of health this is not only regrettable but mischievous. Indeed, in studying the history and the fluctuations in the fortunes of Homburg a big problem presents itself which interests all countries and all places where nature offers some special advantage for the treatment of disease. Too little thought has been given to such questions, too much has been left to mere chance or to the perspicacity of speculators. It is only of late that the State has attempted, at least in some measure, to safeguard the interests of the public. This is notably the case at Vichy. Other places in which the public should be greatly interested have been left almost entirely to rise or to fall according to the length of purse and the ability of certain speculators. Sometimes there have been both ability and money but no agreement as to which form of attraction should be encouraged. This is very generally the case in health stations; it is notably the case at Homburg. Here, as in so many other resorts, we find the two great rival parties. The one seeks to attract visitors by advocating the organisation of innumerable sports, festivities, and pleasures of all sorts; the other party argues that these things are detrimental, that they keep patients away, and that the real welfare of the town depends on the number of cases treated successfully.

So far as the interests of the public at large are concerned the position is very simple. Sports and pleasures do not need the presence of special facilities for medical treatment. Homburg possesses mineral springs of undoubted and exceptional medical virtue; it also enjoys very useful climatic advantages. It is these healing facilities that should be rendered accessible to the greatest possible number of sufferers. Any fluctuation in politics, in fashion, or in financial speculation which prevents the presence of sufferers when their health would be restored by going to Homburg or some other genuine health resort is to be deplored and set down as a public loss. In a word, all that contributes in any marked degree to the relief of disease should be as largely available as possible and no extraneous consideration should step in between the patients and the remedy that they need. Bearing, then, this principle in mind, what has been the history of Homburg? If studied in detail it will show that this resort has owed its prosperity to a fortuitous concourse of very exceptional circumstances rather than to any deliberate effort on the part of any public authority to satisfy an obvious public demand. Perhaps the ancient Romans managed matters better. When this part of the country was annexed to the Roman Empire the natives, said to have been Celts, were making use of the mineral waters to extract salt from them. The Romans did not fail to employ the waters for bathing purposes. The whole country around is rich with Roman remains. Close to Homburg, within an easy tramway ride, under the able direction of Professor L. Jacobi, the Roman fortress of Saalburg has been restored. This is one of the long line of forts that stretched from the Danube to the Rhine and is a great attraction to all who are interested in Roman history and in archæology.

After the departure of the Romans during the dark ages and up to the seventh century but little is known of Homburg. The waters seem to have been used merely for the salt which they contained and which was employed for culinary purposes. In 1622 the Landgraviate of Hesse-Homburg was created under Prince Frederick I. His successor, Frederick II., known as the Silver Leg, enlarged the town and built its present castle or princely residence. In 1766 the Landgrave Frederick Lewis came to power and by devoting especial attention to the mineral springs laid the foundation of the town's future renown. He also succeeded in attracting various celebrities to live at, or to visit, Homburg. But these German princes were notoriously poor and could not do much. The next Landgrave, Prince Frederick Joseph, was, however, fortunate in marrying in 1818 Princess Elizabeth of England, one of King George III.'s daughters. This princess brought with her a settlement of £10,000 a year which was a substantial addition to the 20,000 or so florins which constituted the civil list of the Landgrave. The Princess Elizabeth made herself very popular and for this reason the principal spring at Homburg was named the Elisabethbrunnen. Gardens and walks were laid out, old houses were pulled down, and a deliberate attempt was made by the reigning family to render the mineral waters available for the treatment of disease. These efforts so far succeeded that it became worth while to keep a record of the persons who were now beginning to resort to Homburg for their health. The first such record is dated 1834 and in that year there were 155 visitors. The following year there were a few more; but in 1836 there were 294, and in 1837 no less than 800. In 1839 the maximum figure under the *régime* of the Landgraves was reached—namely, 829.

There now happened the event which has had the greatest effect over the destinies of Homburg. It is impossible to consider this fact without feeling much concern and doubt. Ought the interests of public health to depend to such an enormous extent on other and far less estimable considerations? In 1841 the Landgrave Philip, who had now succeeded to the Landgraviate, concluded a contract with Messrs. Louis and François Blanc conceding to them the right to establish gaming tables at Homburg. At first this did not make much difference. The brothers Blanc had very little capital. They put their roulette tables in a small building, now converted into an institute for mechano-therapeutics, and situated behind the row of jewellers' shops near the Kaiserbrunnen drinking fountain. But an incident soon occurred producing material consequences from which the inhabitants of Homburg still suffer. The Kurfürst von Hessen, who had a castle and an orangery in the neighbouring town of Hanau, was one of the earliest patrons of the roulette and he soon contrived to lose 100,000 gulden. This was the commencement of the fortune of the Blanc brothers and represented a much larger sum than the capital with which they had started. But what affects the town of Homburg to this day is the fact that the Kurfürst von Hessen having lost this sum proceeded to borrow money so as to try to win it back. In those days it was the fashion for princely families to rear orange trees and those at the castle of Hanau were celebrated for their splendour. Nevertheless, they were handed over to the Blanc brothers as a pledge in exchange for a loan of 40,000 gulden. But before this pledge was redeemed their owner died and his son on succeeding to the estate claimed the orange trees back again. As, however, he could not pay the money which had been advanced they were not returned. The new Kurfürst von Hessen was much angered and it so happened that just at that time plans had been made to connect Homburg with Frankfort by a railway which would pass through some of his estates. The scheme was emphatically rejected. The railway nevertheless was built but having to avoid the estates in question has to

follow such a roundabout course that the journey is twice as long as it need have been. For more than half a century countless thousands of people have had to perform a half-hour's journey when, but for the squabble over the orange trees and a gambling debt, 15 minutes would have sufficed. Further, it may be noted that while this dispute was proceeding the orange trees began to sicken and would probably have died if they had not been bought by the late Empress Frederick, then Crown Princess of Prussia, for her garden at Kronberg. Here they were restored to health by the science and skill of the gardener. It is on such incidents as these that the fortune of Homburg has depended, yet it should be based exclusively on the medical qualities of its waters, on its climate, and on the efficacy of its sanitary laws and administration, together with the comforts and accommodation available for patients and visitors.

After the first struggle and when once the winnings of the bank at roulette had accumulated sufficient capital to face all contingencies, the fortunes of Homburg and the Blanc family became identical and went up by leaps and bounds. In 1842 there were 1732 visitors and in two years this number was doubled. In 1847 there were 5167. Speaking of 1848, Heine said: "There comes a time when every monarch is feeling his head to see if his crown is still on it," and this insecurity caused a falling off in the number of visitors but the figures rose again in 1850 and attained 10,105 in 1856. At this they remained and 10,000 may be considered as about the average till 1865, when there were 12,473 visitors. Then was reached the eve of another great crisis in the fortunes of Homburg.

It must not be thought that the gambling alone attracted this increase of visitors. The ability, the enterprise, and the perspicacity of the Blanc brothers are well known, and as an authority on complex financial problems M. Louis Blanc elicited the praise of the late Lord Brougham when he came in contact with him on the Riviera. To make Homburg attractive the Blanc brothers lavished their money on improving the town. They built a palatial Kurhaus or Casino, and soon found that it was not large enough and therefore added two wings, in one of which they built an elegant theatre. The cornfields behind the Casino were converted into a beautiful park, with lake, swans, and various picturesque attractions. Better still, deep borings were made for the mineral springs, to secure them against contamination and to increase the quantity and the trustworthiness of the supply of mineral water. Foreign medical practitioners were encouraged to settle at Homburg. There were one French, one Dutch, and two British medical men to attend to patients of various nationalities. The building of churches for various denominations and nationalities was likewise encouraged. If most of the people who came gambled it was entirely their own fault. Those who were wise enough not to play gratuitously enjoyed all the advantages that were offered.

There were, of course, evil sides to all this prosperity. For instance, the more the Blanc brothers did the less the town was disposed to undertake. Now although, to prosper the roulette, money was freely spent on theatricals, concerts, bands, fireworks, illuminations, parks, sports, casino buildings, and so forth, nevertheless it was scarcely to be expected that the Blanc brothers would devote the proceeds of the gaming tables to the carrying out of a scheme of drainage or of works to provide a well-protected, ample, and pure water-supply. The houses and the hotels were then drained into cesspools which were built anyhow, were not properly cemented or ventilated, and were very generally in a leaky condition. Indeed, a case is related of a large part of the contents of a cesspool pouring out into the kitchen of a first-class hotel just at the moment when the *table d'hôte* was being served. There were some cases of typhoid fever in this hotel and in several other parts of the town. Yet in these old days when the accommodation for visitors was very insufficient and when the general conditions were most insalubrious there was a brilliant crowd. Royal princes and crowned potentates flocked to Homburg and with them the leaders of fashion and the queens of beauty. But the days of gambling were numbered.

The war between Prussia and Austria broke out in 1866 and one result was the annexation of Frankfort with all the surrounding country, including Homburg. There is no longer a Landgrave of Hesse-Homburg; now Homburg is simply a town in the *Kreis* or district of Ober-Taunus and a portion of the kingdom of Prussia. But the Prussian Parliament had altogether abolished gambling. Considering, however, the vested interests that had grown up in Homburg the new Government was willing to give a fairly long notice to quit, though this was done only on condition that an enormous tax should be paid. Previously the town derived only indirect benefits from the gambling, as but a small tax was levied on the Casino. The tables were to be allowed to continue till Dec. 31st, 1872, on condition of paying an annual tax of £24,000. Then a great and final effort was made and the rush of visitors increased as the last moments approached. In 1869 they numbered 19,843. Even during the Franco-German war of 1870 there were 10,841 visitors. In 1871, in spite of the after-effects of the war, there were 18,867, and it was during the last year of all that the zenith was reached when no less than 21,001 persons visited Homburg. But when the last marble had been spun for the last time round the roulette it seemed as if the wheel of fortune had for ever been broken. Hotel-keeper and shop-keeper looked upon their establishments as useless and those who had not yet made their fortunes considered themselves as ruined.

There was, it is true, a faint flicker of hope. The tax which the Prussian Government compelled the owners of the tables to pay had been carefully hoarded up and there remained some £150,000 in hand for which 5 per cent. interest could be obtained in those days. Thus the town saved a permanent endowment out of the wreck of the roulette. Then there were the Casino itself and its magnificent park and gardens, to say nothing of the fact that the appurtenances of the mineral springs had been much improved, and all out of the profits derived from the roulette and the trente et quarante tables. Still it was quite evident that the French visitors who had done so much to render Homburg attractive would not come after the war, particularly as there were no more gaming tables. The Russians would not come, nor the Italians, nor wealthy persons from South America; in fact, it seemed as if no one would come at all unless it were a few English. Thus, and under these depressing anticipations, what may be qualified as a new Homburg, a modern Homburg, came into existence. It is the new, the modern Homburg that may justly claim to interest the medical profession. But when the history of ancient Homburg, the Homburg of a generation ago, is taken into consideration the question arises whether it is right that such valuable mineral springs should have to depend for their popularity on such antecedents. Should there not be some sort of official and scientific body or organisation to make known what is really valuable to humanity, instead of having to wait as was the case with regard to Wiesbaden, Baden-Baden, and Homburg, for the advent of the enterprising owners of roulette tables.

(To be continued.)

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Monyhull Hall.

THE estate of Monyhull Hall, comprising in addition to the hall, a lodge, cottages, stables, outbuildings, and 174 acres of land, is shortly to be put to the purpose for which it was purchased—viz., a home for epileptics and feeble-minded individuals. The management is in the hands of a joint committee of the Birmingham, Aston, and King's Norton boards of guardians and accommodation will at first be provided for 110 patients from Birmingham, 50 from Aston, and 50 from King's Norton. The inmates will be engaged in agricultural pursuits. No one over 45 years of age will be eligible for admission and the necessary precautions will be taken to prevent them propagating their species; children will be left to the care of the education authority. Feeble-minded children on reaching the age of 16 years leave the special schools and it is to provide the extra care and protection necessary after that age that the scheme has been brought forward. The estate cost £100 per acre and although it is not expected that the colony will be self-supporting it is believed that the earnings of the inmates will reduce the cost of their maintenance. The estate is estimated to afford ample room for the erection of as many cottage homes as will be required during the present century. Two other schemes which the boards of guardians have had under consideration for some time—viz., a labour colony for the unemployed and a special home for the "ins and outs"—have been

lately discussed and a definite resolution has been arrived at not to proceed further with them at present. The objection to both schemes has been based largely on the ground of economy.

The Birmingham and Midland Eye Hospital.

The seventy-fifth annual meeting of the friends of the above charity has lately been held. Although there has been a slight diminution in the annual subscriptions, still the item of legacies, due largely to the generosity of the late Mr. Richard Cadbury, amounted for the year to £5887 and the treasurer has been able to show a balance carried forward and partly invested of £13,664. The expenses for the year showed a decrease due to the smallness of the item of repairs and alterations. During the year 26,831 patients had been treated, of whom 1100 were in-patients, and since the foundation of the hospital in 1823 the number of patients admitted amounted to 782,557. During the last year the average number of beds occupied nightly was 73·6 and the average length of stay in hospital was 24·4 days. The number of operations performed on in-patients was 676, including 350 for the removal of cataract, 202 iridectomies, and 85 extirpations of the eyeball. In the out-patient department 637 operations were performed. Spectacles were supplied in 9979 cases and foreign bodies were removed from the ocular surfaces in 8428 cases. The Earl of Dartmouth was elected president for the ensuing year.

Lead Poisoning in the Pottery Trade.

A Parliamentary return has lately been issued relating to lead poisoning in earthenware and china works. The North Staffordshire return relates to 318 factories. In the Potteries 84 cases of lead poisoning were reported compared with 204 in 1899. The proportion of cases to persons employed in lead processes in the Potteries is 0·9 per cent. of males and 3 per cent. of females.

The Pollution of the Trent.

The reply of the Stoke town council to the letter addressed to it on the above subject by the Duke of Sutherland, to which I referred in my last letter, has just been published. In it the council states that it thoroughly sympathises with the duke as the council itself is a fellow sufferer. The council alleges that the pollution of the Trent and its tributaries takes place higher up the stream and it expresses the opinion that there would be little or no cause for complaint if all the other authorities put into the stream as good effluents as those from the Stoke sewage farm. Copies of remonstrances addressed by the council to neighbouring local authorities with regard to the pollution of the streams were inclosed with the reply. The letter further admits that within the last few months some pollution of the river has taken place but points out that this is owing to the breaking of the Campbell-road sewer by the mining operations of the Stafford Coal and Iron Company of which the duke is one of the largest shareholders. At the request of the company the council was making temporary arrangements until such time as the mining company's engineers were of opinion that the subsidence had ceased. However, the corporation, to show its *bona fides*, had decided to take steps to lay down a new iron-pipe sewer without waiting any longer. It has also decided, although it considers its effluent to be a fair one, to call in an expert to advise it on the whole matter. It further asks for specific information as to when and where the Stoke effluent had been turned into the river so as to cause the pollution complained of. The corporation of Newcastle-under-Lyme seems to be at present responsible for some part of the nuisance, since a huge volume of sewage matter is flowing down the Lyme brook from the Dimsdale sewage farm owing to the dam being broken. With these two exceptions, however, none of the local authorities are willing to admit any responsibility for the pollution, pointing to the money that they are expending in experimental works. The local authorities in North Staffordshire are at present actually pledged to the expenditure of £220,000.

The Birmingham Education Committee.

At the last meeting of the above committee the annual report of the special schools after-care subcommittee was approved and directed to be printed and circulated. The chief conclusions arrived at in the report were (1) that a certain percentage of mentally defective children should be educated in board schools to insure sufficient industrial training and to remove those who were known to be moral imbeciles from an environment which must necessarily lead to anti-social conduct; and (2) that industrial colonies should be established where cases which will never become self-supporting or morally responsible in ordinary circumstances may be placed under such supervision as will enable them to contribute to their own support. Mrs. Pinsent, in moving the adoption of the report, thought that in time they would be able to turn out 30 per cent. able to earn their own living, since they were now attempting to educate in special classes children of a higher mental capacity than when the schools were instituted four years ago. At that time there were only about 100 children so educated, the majority of whom were almost imbeciles. An interesting statement in the report was that there were 206 epileptic children in the city and of these all but 20 suffered in so slight a degree that they could be educated in the day schools under ordinary conditions and by ordinary methods.

The Health of Birmingham.

The health of the city still remains good despite the fact that owing to the great dryness and heat there has been an outbreak of diarrhœal complaints. A significant fact in connexion with deaths from diarrhœa is that practically all of them occur in the families of the working classes. Further, amongst babies under six months old, fed naturally, 8 per 1000 died, while of babes not naturally fed 252 per 1000 died, or more than 30 times as many. Three fresh cases of small-pox have been notified and the number of cases of scarlet fever is slowly increasing, although they are happily of a mild nature.

August 8th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

University of Liverpool: Award of Robert Gee Scholarships.

Two Robert Gee scholarships, each of the value of £25, tenable for one year, have been awarded to Joseph Bamforth, Warrington Grammar School, and Idwal J. Williams, Holyhead County School. The successful candidates must register as medical students in October and attend the classes required for the first year's study for a medical degree of the University of Liverpool. The scholarships, which are four in number, are among the benefactions bequeathed to the university by the late Mrs. Gee, widow of Dr. Robert Gee, formerly physician to the Liverpool workhouse. The scholarships are only open to male students and to those who have not attended day classes at the University.

Munificent Bequest to the Delamere Forest Sanatorium.

The trustees of the late Mr. James Holden of Marsland, near Rochdale, have made a grant of £10,000 to the Delamere Forest Sanatorium for Consumption. One of the conditions is that six beds shall be set apart for the exclusive use of Rochdale patients. Some time ago an influential Rochdale deputation waited upon the trustees to ascertain whether it were possible to make a grant to an institution for the treatment of consumption at Rochdale, but that institution could not comply with the terms of the will, which states that the money can only be given to well-established institutions. The proposed grant to the Delamere Forest Sanatorium was then put forward as an alternative scheme. The total bequests to charities of the late Mr. Holden amounted to £250,000.

Liverpool Royal Infirmary: Appointment of Assistant Gynæcological Surgeon.

The newly created post of assistant gynæcological surgeon at the Royal Infirmary has been filled by the appointment of Dr. W. Blair Bell. There were four candidates for the election committee to choose from, two being local men and two from London.

Liverpool Institute of Tropical Research.

The initial meeting of the council of the Liverpool Institute of Tropical Research was held on August 2nd, when Sir Alfred Jones, K.C.M.G., was unanimously elected chairman. Viscount Montmorres was appointed the director of the institute and Dr. Eric Drabell the economic botanist. The following gentlemen were appointed to act as a professional board: Professor E. C. K. Gonner (statistics), Professor Harvey Gibson (botany), Professor W. A. Herdman (zoology), Professor B. Moore (physiological chemistry), and Professor Ronald Ross, C.B., F.R.S. (tropical hygiene and

sanitation). At the end of the meeting the chairman announced that Mr. W. H. Lever had promised a similar guarantee to his own—£1000 a year for four years—that Mr. T. Sutton Timmis would contribute £250 a year, Mr. John Rankin £250 a year, and Mr. H. Sutton Timmis £50 a year.

August 8th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

The North Devon Infirmary.

THE annual meeting of the governors of the North Devon Infirmary at Barnstaple was held on July 25th, the Lord Lieutenant of the county (Viscount Ebrington) presiding. The report stated that during 1904 the in-patients numbered 892, against 840 in 1903, and that there were 4014 out-patients treated as compared with 3032 in the previous year. The average daily number of in-patients was 53. The financial statement showed that the receipts amounted to £2593 and that the expenditure was £2510. It was decided to make several structural alterations in the building so as to provide accommodation for 50 additional beds, 16 being for men, 20 for women, and 14 for children.

The Sale of a Medical Practice in Bideford.

Allusion has been made in THE LANCET[1] to litigation connected with the transfer of a medical practice in Bideford. Dr. Alexander Lane sold the practice to Mr. E. Pearson who subsequently brought an action against Dr. Lane, when the jury gave a verdict in favour of Mr. Pearson for £200. Dr. Lane subsequently became bankrupt in Newcastle-on-Tyne, whereupon the judge of the Newcastle county court granted him an immediate and unconditional discharge. An appeal against this decision was heard by Mr. Justice Bingham and Mr. Justice A. Lawrence on August 1st. Mr. Justice Bingham in giving judgment said that Mr. Pearson had not received a penny of the £200 which through the finding of the jury ought to have been paid to him by Dr. Lane; this was a state of things which the legislature distinctly said was not to be. His lordship added that Dr. Lane was not entitled to his discharge and the appeal against the decision of the Newcastle county court judge was upheld. Mr. Justice Lawrence agreed and the appeal was allowed, with costs, an order being made for the suspension of the discharge of Dr. Lane for two years.

The Appointment of Medical Officer of Health for Wrexham.

The Wrexham rural district, which has a population of 56,000 and an area of 65,000 acres, has two medical officers of health, following the custom which at one time was very common of appointing the Poor-law medical officers as medical officers of health. An endeavour is being made by the Local Government Board to put an end to this undesirable duplication of officers under one authority and one of the recommendations of Dr. L. W. Darra Mair, made after an inspection of the district two years ago, was that at the first opportunity an effort should be made to appoint one officer who should devote his whole time to his duties. The death in March last of Mr. R. W. J. Evans, the medical officer of health of Wrexham borough, has led the rural district council to suggest the appointment of a medical officer of health for the two districts at a salary of £500 per annum. The combined population is over 70,000. When the proposal came before the town council it met with some opposition, one member arguing that the size of the district was so great that it could not be efficiently covered by one official. No decision was come to in the matter and the question will be discussed again in September.

Llandrindod Wells.

The large common of about 50 acres, which adjoins the pump rooms at Llandrindod Wells, has been in danger of being given over to builders, and those who drink the waters have been perilously near being deprived of a breezy open space in which to take their ten minutes' walks between drinking each glass of saline or sulphur water. The district council has succeeded, though with some difficulty, in getting a Bill through both Houses of Parliament enabling them to purchase the common and to secure nearly all of it as an open space for ever.

[1] THE LANCET, Feb. 18th (p. 465) and July 1st (p. 56), 1905.

Lunacy in Herefordshire.

Mr. C. S. Morrison, the medical superintendent of the Hereford County and City Lunatic Asylum, in his annual report to the committee of visitors points out that Hereford can claim to be among the first to have recognised and to have provided for the more humane treatment of the insane, for as long ago as the year 1798 there was in the city a hospital for the mentally afflicted which had been founded by the private munificence of the few and was maintained by public charity. There are, it appears, certain endowments from this hospital which are administered by the governors of the general hospital and £10 yearly are given to the asylum committee to be used by them in aiding deserving patients when leaving the institution. Mr. Morrison suggests that the fund might be used for the maintenance of a special department of the hospital in which the early treatment of incipient insanity could be carried out.

Isolation Hospital Treatment in Newport.

The town of Newport (Mon.) is well provided with isolation hospital accommodation and this is made good use of by the inhabitants. During 1904 there were 259 cases of scarlet fever notified to the medical officer of health and of these 84 per cent. were treated in the hospital, while 71 per cent. of the patients suffering from typhoid fever and 60 per cent. of those suffering from diphtheria were also removed there. Since the extension of the hospital two years ago the town has been comparatively free from epidemics of these diseases and Dr. J. Howard-Jones, the medical officer of health, suggests that one of the small blocks should be used for the reception of early cases of pulmonary tuberculosis among the poorer classes of wage-earners who cannot afford to pay the fees which are charged in other sanatoriums. He considers that as the capital outlay would be small and as the administration charges have to be paid in any case the cost per patient would not exceed one guinea weekly.

August 7th.

LEEDS.

(FROM OUR OWN CORRESPONDENT.)

The Professorship of Surgery at the University of Leeds.

Mr. Edward Ward, who has held the professorship of surgery for the past six years, has resigned and the council, in accepting his resignation, has expressed its sense of the loss which the University has sustained in the limitation which this will impose on his teaching. I say "limitation," for happily Mr. Ward, who is senior surgeon to the infirmary, retains his post as clinical lecturer on surgery and as such is a member of the Faculty of Medicine. The council is to be congratulated on its choice of a successor and Mr. Harry Littlewood, M.Sc. Leeds, F.R.C.S. Eng., will, I feel confident, maintain the high standard of teaching which his predecessors have set. Mr. Littlewood began his connexion with the school as honorary demonstrator of surgical pathology and for the last six years has been the lecturer on practical surgery. His promotion causes a vacancy, therefore, which the council intends to fill up at a subsequent meeting.

Airing Grounds for Patients of Hospitals.

The use which is made as airing grounds for the patients of the open spaces, small though in many cases these may be, which are attached to the various London hospitals is familiar to all who visit these institutions, but probably there are few other than those who have been resident officers who are aware of the extent to which the terrace of the Leeds Infirmary is utilised for this purpose. This "terrace," which can only be seen from the surrounding thoroughfares at one or two points, forms a means of communication between the upper part of the five ward pavilions originally designed by Sir Gilbert Scott and provides a fairly extensive and elevated airing ground or balcony. It is now intended to provide means of access to this from the upper ward of the large new pavilion, which formed a part of the great extension of the infirmary carried out some 12 years ago. Plans have been prepared by Mr. Sidney Kitson and approved by the board which show a covered terrace or elevated corridor passing from No. 18 Ward to an extension of one of the three sides of the existing "terrace" which will be converted into a shelter.

Depôt for the Sale of Pure Milk.

It was announced some time ago that the Leeds corporation had decided to institute a depôt for the sale of pure milk by making an arrangement with a farmer to purchase all his milk subject to his observing certain stringent conditions as to the regulation of his dairy. This announcement, it is now found, was premature, for when the recommendation of the sanitary committee on which it was based came up before the city council for confirmation it was ruled that it was not in harmony with statute that the recommendation should be carried out. The opinion is held by some that certain corporations that have instituted such depôts are acting *ultra vires* and some think that Leeds might have followed suit and risked being pulled up. The lord mayor, who gave his ruling after careful consideration and consultation with legal authorities, has shown his sympathy by subscribing £200 towards the expenses of instituting such a depôt and no doubt the necessary sum will be readily secured. It is understood that the corporation intends to apply for powers to institute and to carry on such a depôt and it is gratifying to find that there is a practical certainty of the work being meanwhile carried on by voluntary effort.

August 8th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Inebriate Homes in Scotland.

IN his report on the Inebriate Homes in Scotland Dr. J. C. Dunlop, who is inspector for Scotland under the Inebriates Acts, deals with Girgenti. This reformatory is managed by a committee of the Glasgow town council and certified for the reception and treatment of 58 women convicted under Sections 23 and 24 of the 1898 Act. It has now been in existence for four years and to it 88 inmates have been admitted. On Jan. 1st, 1904, there were resident in the reformatory 39 inmates, absent on licence 18, and absent without leave (having escaped from the reformatory or absconded from guardians when out on licence) 10—in all 67. During the year 10 women were admitted, 29 were discharged at the expiry of sentence, four were transferred to the State reformatory, and one died. On Dec. 31st there were in residence 27, out on licence nine, and absent without leave seven, making a total of 43. The daily average number in residence in the reformatory during the year was 38. While stating that the amount of reformation resulting from treatment in this reformatory is small, Dr. Dunlop does not consider that it is in any way indicative of failure on the part of the institution, for the functions of these reformatories are twofold, the cure of the inebriate and the segregation of the inebriate, and if the reformatory fails to fulfil the one function entirely it is nevertheless useful in that it can, and does, fulfil the other. This second function, the segregation of drunken pests, is a most useful and beneficial one, and is one which perhaps the managers of this reformatory might give more credit to than they have recently done. If the managers would consider their reformatory as a means for preventing the spread of drunken habits in the town as much as, if not more than, a means of curing the degraded drunkard and would use it accordingly then the present useful functions of Girgenti Reformatory would be greatly enhanced. Let them look to their reformatory as an institution comparable to an infectious diseases hospital, an institution founded to serve a double purpose, the treatment of the sufferer and, in addition, the safeguarding of others. The cost of maintaining Girgenti Reformatory during the year has amounted to £2747 12*s.* 6*d.* Of this sum £1084 7*s.* 6*d.* were contributed by the Treasury; £4 14*s.* 10*d.* were received as payment for work done by the inmates; and the balance of £1650 11*s.* 5*d.* was paid by money collected by assessment in Glasgow. During the period under consideration at the Greenock Reformatory the average daily number of convicted persons in residence was 18·3; but in addition to these there was a considerable number of voluntary inmates. The convicted cases were all confirmed inebriates and most of them had been so for years. The ages of the 15 admitted ranged from 21 to 48; their mental state as reported by the medical officer was good in only five cases, in four it was moderately good, while in six it was decidedly weak if not actually insane.

The Marine Biological Association of the West of Scotland.

This association is now holding its summer classes for teachers in marine biology. The "A" course finished last week and the "B" course commences this week. The first course includes description and dissection of certain types, external examination and identification of the remaining types, and demonstrations in the tank-room. The second year's course is chiefly taken up with the mounting of selected specimens which remain the property of the students. To this is added in the third year's course instruction in the systematic zoology of special groups. The steam yacht *Mermaid* is used for dredging excursions, and those who are taking advantage of the facilities placed at their disposal find that they are enjoying a pleasant holiday and at the same time acquiring a considerable store of knowledge. In order to encourage the study of this interesting subject certain of the school boards in some instances are paying the necessary fees.

Cottage Hospital for Port Glasgow.

At a recent meeting of the magistrates of Port Glasgow Mr. John Birkmyre intimated that he and his wife had decided to gift £10,000 to the burgh for the erection of a cottage hospital. A suitable site behind Chapelton school has been granted by Sir Hugh Shaw Stewart at a minimum feu-duty. The hospital is to be composed of two wards and to contain 22 beds. In the event of the whole £10,000 not being required for building purposes the balance is to be used as the nucleus of an endowment fund.

Swimming and School Boards.

The lessons in swimming provided by the Glasgow school board to the boys in the higher classes are much appreciated and the results are highly creditable. Over 600 boys were tested from 20 different schools and 90 per cent. of the boys who have had two lessons per week during the last eight weeks were able to swim satisfactorily, while 50 per cent. of those receiving one lesson per week were able to swim fairly well. To any reader of the newspapers during the summer months when so many drowning accidents occur this action of the school board will seem highly commendable and should eventually if persisted in result in the saving of many valuable lives.

August 8th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Apothecaries' Hall of Ireland.

AT the annual meeting of the governor and council of the Apothecaries' Hall of Ireland held on August 1st the officers were elected for the ensuing year. The *personnel* of the council remains much as before but Lieutenant-Colonel F. G. Adye-Curran, M.D. Dub., F.R.C.S. Irel., was duly elected governor and representative on the General Medical Council for the coming year.

Epizootic Lymphangitis in Ireland.

The alarm caused by the epidemic of glanders among horses in Ireland has been somewhat allayed by an official statement from Colonel Davidson, A.Q.M.G. Irish Command, Royal Hospital, Dublin, stating that the disease which first appeared at the Curragh camp in last November was effectively checked by the preventive measures adopted, the total number of cases having reached only 42. The horses from the large districts of Waterford and Kilkenny are, however, prevented from being sent to the coming horse show held by the Royal Dublin Society, which latter constitutes both from the economic and social points of view the most important annual festival in Ireland. The recent discussion in the House of Lords shows the importance of the matter.

Health of Dublin.

A fair index of the zymotic health of Dublin is generally to be found in the records of the monthly meeting of the governors of Cork-street Hospital. On July 13th the medical superintendent reported that during the month of June there was a large increase in the number of cases of pneumonia of a severe type admitted to the hospital, scarlet fever and diphtheria contributed a fair share of the deaths, while cases of measles declined considerably. The admissions of enteric fever cases were not numerous but they were

generally of a severe type. There has been much comment on the exceptionally dry weather which has recently prevailed in Dublin and in Ireland generally. The governor of the Royal Botanic Gardens, Glasnevin, has reported that during the three months ending July 31st, 1905, the record of rainfall in the district has been unusually low, the season having proved the driest since 1867—the jubilee year.

Health of Belfast.

At a meeting of the city council held on August 1st it was reported that measles is again more or less prevalent in Belfast, 17 deaths having been caused thereby. Between June 18th and July 15th there were notified 178 cases of zymotic disease; 65 cases of simple continued fever; 32 of typhoid fever, 26 of scarlet fever, 24 of erysipelas, six of diphtheria, four of croup, and one of small-pox. The annual death-rate was 17·1. Diarrhœa is also very prevalent, having caused 26 deaths in the last month. A deputation appeared before the council representing the inhabitants of the Shore-road and the North-East district of Belfast to condemn the system of bacteria beds, urging that there should be no more outlay and that a thorough investigation should take place into the proper method to be adopted. Finally they protested against the discharge of sludge upon the beach in the neighbourhood. In reply it was stated that the bacteria beds worked satisfactorily in Belfast and the last bed put down, which was somewhat of an improvement on the former ones, was purifying to the extent of 96 per cent. the sewage passing through it.

Down District Asylum.

The report for the year ending Dec. 31st, 1904, has just been published. 179 cases were admitted during the year and there were residing in the institution on Dec. 31st 700 inmates—384 males and 316 females—the total cases under care during the year being 451 males and 391 females. There were 84 discharges, the percentage of recoveries on admissions being 41·9. With the possible exception of dysentery there was no disease due to local conditions and this affection is reduced in frequency and in severity of type. The inspector of lunacy in his report has expressed "entire satisfaction" with the institution and he made no suggestion for improvements which would entail any considerable expense.

Death of Mr. John Auterson, L.R.C.P. Edin.

On the night of August 5th as Mr. John Auterson, a well-known medical practitioner of Cookstown, co. Tyrone, was returning home from paying a professional visit in the country his horse shied at the reflection of a lamp on the white-washed gable of a house on the road. The animal ran back and the vehicle with Mr. Auterson was precipitated into a bog 15 feet below. The road at the place and for many yards is totally unprotected, not even a wire fence or hedge being provided at a place where the bog has been gradually cut away to provide firing by the use of the peat (or turf as it is called in Ireland). The accident was fortunately seen and Mr. Auterson was removed to an adjacent house where Mr. R. Burgess (Coagh) and Dr. C. H. P. D. Graves, Dr. W. J. R. Knight, and Mr. R. Crossett (all of Cookstown) did everything in their power for their injured *confrère*. On the evening of the following day Mr. Auterson was removed to his own house where he died on August 7th. The deceased gentleman, who was born at Coolsarngh, Desertmartin, became in 1868 L.R.C.P. Edin., and practised at first in Draperstown but 30 years ago removed to Cookstown, where he built up a large practice and was greatly liked by the public and his professional colleagues. He was unmarried and leaves a brother, a medical practitioner, in Magherafelt.

August 8th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Action of Metallic Ferments on the Blood Cells and on the Production of Uric Acid and Urea.

IN THE LANCET of Dec. 24th, 1904, p. 1816, an account was given of some investigations made by M. Albert Robin showing that metabolic processes in animals might be modified by hypodermic injections of fluids containing a minute amount of certain metals in a state of extreme subdivision. The metals in question were palladium, gold, silver, and platinum; their effects were shown by alterations in the quantitative composition of the urine and in the amount of carbon dioxide excreted and the name of "metallic ferments" was given to the solutions possessing this property. At a meeting of the Academy of Medicine held on July 18th M. Robin read a paper describing further observations which he had made on the same subject in conjunction with M. Émile Weil. He said that they had examined the effects produced by the metallic ferments on three patients suffering from subacute articular rheumatism or cancer of the stomach. The excretion of urea and uric acid and the assimilation of nitrogen were always increased with simultaneous production of leucocytosis and intense leucolysis. They had endeavoured to discover the origin of the uric acid thus produced and eliminated in excess. It was well known that uric acid was supposed to be derived from nucleins set free and decomposed in the organism as a result of the destruction of the white corpuscles of the blood, but in the present cases the polynuclear neutrophiles must be regarded as the source of the uric acid that was eliminated. It was to be remembered, however, that leucolysis and the formation of uric acid were not uniformly associated and might be brought about independently of one another by the use of certain drugs. It was obvious therefore that uric acid had no immediate and invariable connexion with the destruction of leucocytes but that it might arise from other causes influencing the hæmopoietic organs. To explain the observed facts M. Robin and M. Weil have suggested an hypothesis of which the following is an outline. The leucocytes are the carriers of the soluble organic ferments; these ferments when set free by leucolysis exercise a deoxidising action in the organism and give the first impulse to the processes which result in the formation of urea and uric acid. If, however, the ferments do not cause the elimination of uric acid, as is the case in cancer and cachexial diseases, it is probable that the leucocytes contain no diastase because destruction of the leucocytes is not followed by the ordinary results of the liberation of diastase. Whatever may be the value of this hypothesis the observed facts which it endeavours to explain at least deserve to be recorded.

Neuroses of Childhood and the Education Problem.

At the same meeting of the Academy of Medicine M. Maurice de Fleury described 37 cases of idle, inattentive, mentally depressed, and unruly children who were neurasthenic, arthritic, hysterical, and mentally deficient, with some indications of chorea and diabetes. An improvement followed on the use of appropriate treatment. M. de Fleury said that the physical conditions reacted on the moral conditions in children as well as in adults, a circumstance which justified medical treatment even when the disorder was apparently an intellectual perversion (*maladie de l'esprit*). Many troublesome school children upon whom punishment had no beneficial effect were found when carefully examined to be the subjects of either definite neuroses or nutritional diseases. The results of medical treatment showed that the association of these conditions was not a mere coincidence but that they were mutually related as cause and effect. The treatment required to be supplemented by intellectual and moral re-education.

Tetanus of Uterine Origin.

At the July meeting of the Société d'Obstétrique, de Gynécologie, et de Pédiatrie Dr. Ris described a case in which the patient was a primipara, 18 years of age. She was at first attended by a midwife, an elderly woman, but a medical man had to be sent for, who found that labour had been in progress for 48 hours, that the shoulder was presenting, and that the fœtus was dead. Dr. Ris decided to perform embryotomy by the method of Dubois. The uterus was in a state of tetanic contraction and rupture of it occurred as soon as the operation was attempted. Dr. Ris thereupon immediately performed Porro's operation. The patient's condition was favourable until the evening of the twelfth day, when her temperature rose slightly and her neck became stiff. The ordinary symptoms of tetanus afterwards appeared and she died suddenly. Fluid from the cervix contained the bacillus of tetanus in pure culture.

White Swelling of both Knees.

At a meeting of the Surgical Society held on July 26th M. Walther showed a man, 20 years of age, who when in his tenth year was found to have a white swelling of his left knee. Recovery followed after some months but the joint was ankylosed at a right angle. Last November the young

man came under the care of M. Walther with a white swelling of the right knee. Orthopædic resection was necessary for the left knee, but as a double resection would have condemned the patient to walk with crutches for the remainder of his life M. Walther treated the right knee by the sclerogenous method (interstitial injection of chloride of zinc). The joint is now moveable and the man can walk very well.

The Relative Merits of Rapid and Slow Methods in Surgical Operations.

At a meeting of the Surgical Society held on July 27th M. Doyen delivered an interesting address on Rapid and Slow Methods of Operating. He said that prolonged operations had come into use since the discovery of the means of producing anæsthesia and preventing sepsis. The earliest of the prolonged operations were those in which the écraseur of Maisonneuve and Chassaignac was employed. The inventor of the serre-nœud aimed at the prevention of purulent infection. At the present time the rapid and slow methods had each their respective advantages. Most operations consisted of two distinct stages, the first being the removal of the affected part (*exérèse*) and the second being the procedures preliminary to closing the wound (*réparation*). The first stage ought to be accomplished in the least time possible so as to avoid loss of blood and to diminish surgical shock. The second stage, on the other hand, required both time and care in order that a good result might be secured. It was only by following a simple and definite method that the affected part could be removed both quickly and well. Skilful management of the first stage tended to simplify the second stage. In some instances the whole of an operation might include no more than one of the two stages already mentioned; for instance, the removal of large naso-pharyngeal polypi consisted only of the first stage and operations for fistula only of the second stage. Gastro-intestinal operations consisted principally of the second stage, because the removal of the affected part required minute precautions and complicated procedures. Every surgeon ought to possess manual dexterity and presence of mind sufficient for the rapid performance of such stages of an operation as should not be prolonged; he would then be able to give the necessary time to the ligatures, the sutures, and the closing of the wound. The future in surgery would belong to the most skilful and to those who followed the best methods.

Reflex Facial Movements.

At a meeting of the Medico-Chirurgical Society held on July 10th M. Maurice Bloch said that it was common enough to see the features of patients distorted with pain, but on carefully observing this reflex he had observed that it sometimes appeared on the side opposite to the seat of the pain. A man suffering from intestinal pain on the right side had facial distortion on the left side. Another man suffering from crural neuritis made spasmodic movements with the orbicularis muscle and the eyelids of the opposite side. This fact was an additional proof of the decussation of the sensory nerves and the close connexion of the sensory and motor fibres in the same cerebral hemisphere. This sign might be looked for in various other conditions and might, perhaps, in course of time become valuable. Care must be taken to distinguish between reflex grimacing and tic.

The Influence of Sea Salt on the Development of the Ova and Larvæ of Ankylostomum.

At a meeting of the Academy of Medicine held on July 25th M. Calmette said that he had found that common salt had no action on the ova of ankylostomum, but that, on the other hand, it affected powerfully the larvæ even in a solution of 2 per cent. strength. In salt water the larvæ generally died from two to seven days after coming out of the ovum. M. Calmette made experiments with the water of four ditches at Valenciennes the water in which contained salt added in proportions varying from 1·16 to 3·97 per cent. In the solutions of 1·16 per cent. strength the ova hatched out quite well but the larvæ died in 15 days. In the solutions of 3·97 per cent. strength the ova did not hatch out, but if after some time they were transferred to a normal medium hatching then took place, which proved that the salt had no destructive action on the ova. Salt water, however, could not be used in coal mines for the prevention of ankylostomiasis and energetic disinfection of the infected areas would be necessary.

Poisoning by Unripe Tomatoes.

A family consisting of four persons—father, mother, and two sons—fell ill two and a half hours after one of their meals, all complaining of violent colic and profuse diarrhœa. The father and one of the sons were in a very low condition and the medical man who was called in was surprised to find dilatation of the pupil in all the patients. The cooking vessels showed no particular feature; meat did not form a part of the food; and the only constituents of it which attracted attention were some tomatoes not fully ripe. The patients soon recovered after taking ipecacuanha and some tea with rum in it. A few days later the same practitioner was called to see a young man who presented similar symptoms one and a half hours after taking food which consisted partly of tomatoes. Some of them remained over and were seen to be not quite ripe. These two cases are interesting, for examples of poisoning by tomatoes have hardly ever been reported.

August 7th.

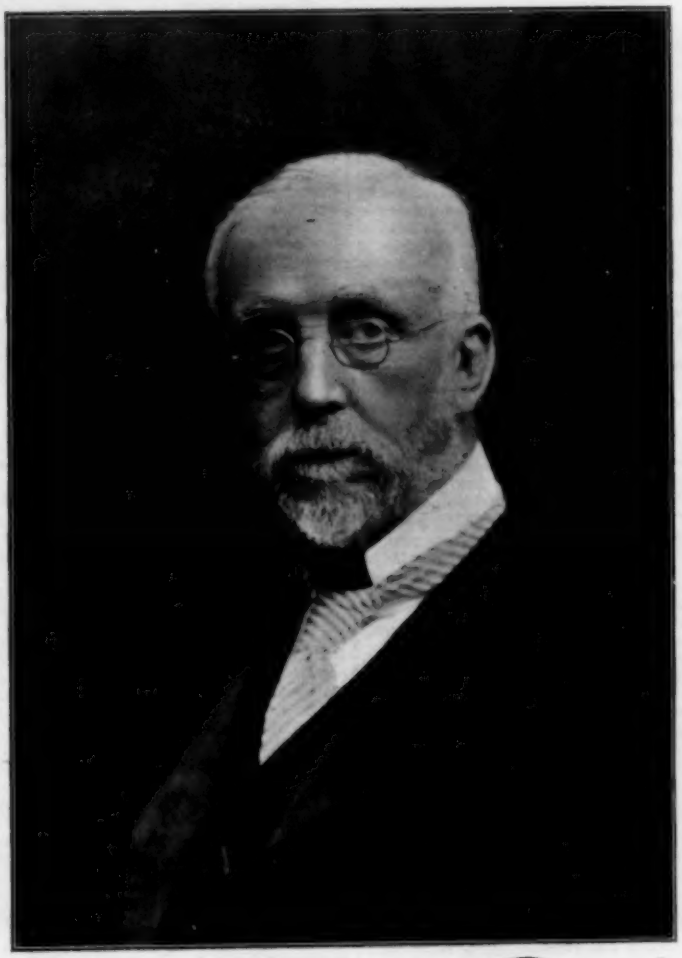
Obituary.

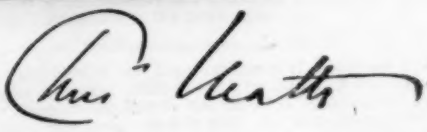
CHRISTOPHER HEATH, F.R.C.S. ENG.,

CONSULTING SURGEON, UNIVERSITY COLLEGE HOSPITAL, ETC.

WE regret to announce the death, which occurred suddenly on August 8th, at his residence, 36, Cavendish-square, W., of Mr. Christopher Heath, F.R.C.S. Eng., Emeritus Professor of Clinical Surgery in University College, London, and a past President of the Royal College of Surgeons of England. Christopher Heath was born in London in 1835, being the grandson of Mr. John Heath, a surgeon in the Royal Navy, who served in the flagship under Lord Howe about 100 years ago. He was educated at King's College School and at King's College and King's College Hospital, London. He served as a surgeon with the Baltic Fleet during the Crimean war in 1855 and in 1856 he became a Member of the Royal College of Surgeons of England, proceeding to the Fellowship in 1860. In the year 1856 he was appointed demonstrator of anatomy at Westminster Hospital and six years later he was made lecturer on anatomy and assistant surgeon at the same hospital. In 1866 he was appointed assistant surgeon and teacher of operative surgery at University College Hospital and in 1875 he became Holme professor of clinical surgery and full surgeon at the same hospital. It was while he was at Westminster Hospital that he wrote his well-known "Practical Anatomy," a ninth edition of which was published in 1903, and the year after his appointment to University College Hospital he was awarded the Jacksonian prize for his essay upon "The Injuries and Diseases of the Jaws, including those of the Antrum, with the Treatment by Operation or Otherwise." In 1881 he was elected a member of the Council of the Royal College of Surgeons of England and in 1895 President of that body, a post which he held also during the year 1896.

Christopher Heath was an admirable teacher and the clearness and practical nature of his style are well known by his clinical lectures on surgical subjects, of which he published two series—one in 1895 and the second in 1902. Among his other well-known works were "A Course of Operative Surgery," the second edition of which appeared in 1884, and the widely-read "Manual of Minor Surgery and Bandaging," which ran into 12 editions. He was the editor of "A Dictionary of Practical Surgery," a well-known work which appeared in 1886. In 1897, as President of the Royal College of Surgeons of England, it fell to his lot to deliver the Hunterian Oration, the text of the oration being "John Hunter considered as a Great Surgeon." A very full abstract of the lecture appeared in THE LANCET of Feb. 20th, 1897, and in the same year he had the honour of delivering the second course of the Lane Medical Lectures which had recently been founded in connexion with the Cooper Medical College in San Francisco. To quote the words of Dr. Cooper Lane, the President of the College, "this course was addressed especially to the students of that school but was also attended by some hundreds of medical men of the Pacific coast; the attention of the audience to the teachings of this eminent English surgeon was markedly





intense and reverent. The closing lecture, 'A Century of Surgery,' was replete with illustrations of the advancement of surgery during the nineteenth century. As a contributor to this progress great distinction was given to Lord Lister. Other men, both Europeans and Americans, who have aided in this advancement received appropriate mention. The lectures of Mr. Heath were characterised by a judicious blending of the science and the art of surgery—of the one not so much as to be tedious, of the other enough for guidance to the surgical practitioner. He taught how in boldness not to be rash, how in conservatism not to be inactive. For the appreciated and satisfactory work done by Mr. Heath in San Francisco the New World now brings its honest tribute to add to the honours and renown, so well and worthily won, with which the Old World has so long distinguished him." It was upon this occasion that the University of Montreal conferred upon Mr. Heath the honorary degree of LL.D.

With regard to his surgical work Christopher Heath was a very bold and successful operator and having served as house surgeon to Sir William Fergusson at King's College Hospital he acquired much of the energy and quickness in operating which distinguished that great surgeon. It was in the surgery of the jaw that his operative power could be seen at its best and no one who has seen Mr. Heath removing the superior maxilla is likely to forget the operation. The rapidity and the decision with which it was done were very striking. He was fertile in resources and devised many ingenious methods of overcoming difficulties occurring in the practice of surgery. He had had much operative experience before the introduction of antiseptic surgery, and though he adopted and religiously practised the routine which characterised Listerism at its first introduction yet he was inclined to look down upon many of the precautions as useless fads, and therefore he welcomed the simplifications which more recent years have effected in its procedure. Great, however, as Mr. Heath was as an operator yet it was in his teaching that he shone pre-eminently. For many years as Holme professor of clinical surgery it was his task to instruct and to catechise the students about to present themselves for examination in surgery and the value of these classes to candidates was very great. At one time Mr. Heath had done much "coaching" in surgery and this experience no doubt stood him in good stead; his periods of office as an examiner were also doubtlessly of use, but whatever may be the explanation of it, the fact remains that as a teacher he was truly great. The facts which he communicated to his pupils and the answers which he endeavoured to elicit from them were exactly the facts and the answers which were needed for the *viva voce* examinations in surgery. He was somewhat inclined to think that the bacteriological theory of disease was a little overdone and he attached more importance than is customary now to what are called the contributory causes of disease and it must be confessed that he was partly right in this. It was not, however, only in the examinational aspect that his teaching was of value, for it abounded in useful practical points which were likely to remain in the memory of the hearer for long afterwards.

Christopher Heath was a born controversialist of the old-fashioned type—very direct, a hard hitter, and with an intense belief that his opinion was the right one. As in the cases of the late Lord Grimthorpe and the late Sir William Harcourt, his arguments had rather the directness of the bludgeon than the finesse of the rapier.

Mr. Heath was for a long time a leading contributor to THE LANCET and during his Presidency of the Royal College of Surgeons of England he acted as one of the Almoners of THE LANCET Relief Fund.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Moritz Elsner, at Homburg, after a long illness, at the age of 45 years. He was assistant to Professor R. Koch in the Institute for Infectious Diseases in Berlin and published numerous papers on Examination of Water, on Disinfection, the Value of Formaldehyde, &c.—Dr. Paul Schultz of the Berlin Physiological Institute, at the age of 41 years. He edited Munk's "Physiology" and Oestreich's "Compendium" and published numerous researches on the Physiology of Striped Muscles, of Respiration and of the Brain, as well as papers on many other subjects.—Dr. Augustus P. Dudley, Professor of Gynæcology in the New York Post-graduate School.—Dr. Edvard Schönberg, Professor of Midwifery, Gynæcology, and Children's Diseases in the University of Christiania.—Dr. J. L. Chaufleury van Ysselstein, formerly professor in the Amsterdam Medical Faculty, at the age of 86 years.—Dr. Leopold Treitel, a Berlin laryngologist and otologist, whose writings have dealt mainly with deaf-mutism.—Dr. Eduard Lewy, who is looked upon in Vienna as the founder of modern industrial hygiene and who taught this subject in the Vienna Polytechnic.—Dr. Bernhard Honsell, formerly assistant to Professor von Bruns in Tübingen.—Dr. Josef Brettauer of Triest, a well-known ophthalmologist and a voluminous writer.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Medical Men and Legislation.

Dr. Wiley, of the Department of Agriculture, makes a strong plea in favour of more medical men in our national legislature. He states that in the Fifty-seventh Congress there were 319 lawyers, 93 business men, 32 politicians, 12 editors, eight farmers, three teachers, one clergyman, one military man, and three physicians. In view of the great amount of sanitary matter involved in modern legislation it is to be deplored that the medical profession is not largely represented, and by the ablest medical men of the country. It is acknowledged by all that the building of the Panama Canal is more a sanitary than an engineering problem. The men who will really build the canal will be the physicians and health officers who eliminate the germs of malaria and infectious diseases from that locality. If the canal fails it will not be for the lack of dredges, shovels, picks, or machinery nor for want of money, but will be due to the ravages of cholera, of yellow fever, and of other malarial diseases.

The Campaign against Tuberculosis.

The recent meeting of the National Association for the Prevention and Study of Tuberculosis reveals the remarkable progress which has been made within the last year or two in simplifying the methods of prevention and treatment of this disease. The outlook now appears to prove that if equal progress continues to be made the great white plague, the scourge of the race for centuries, will be exterminated from civilised communities within a few years. Climate is now no longer regarded as essential or even the most important factor in its treatment. It is not so much the quality as the quantity of the air consumed. One locality is better than another only because the conditions favour living out of doors. The roof-garden in the city gives as good results as the far-away resorts of Colorado, Arizona, and New Mexico, provided the patient properly and persistently resorts to it. Protests are now being made by the people of the Far West against sending tuberculous persons from comfortable homes in the Eastern States to their climate. An important result of the new opinions in regard to the value of fresh air everywhere in the treatment of tuberculosis is the creation of local sanatoriums in every community for the benefit of the poor. It is no longer a question of State sanatoriums but the agitation is in favour of a sanatorium for every municipality and hamlet. The reports of the association at its late meeting show extraordinary activity among the entire people of this country in adopting the measures recommended for the prevention and treatment of tuberculosis and a greatly diminished death-rate from this disease in the large cities.

Tetanus Neonatorum in Cuba.

The President of the Superior Board of Health of Cuba, Dr. Carlos J. Finlay, attributes the frequency of this disease in that Republic as due to the use of a cheap cotton wick with which the funis is usually tied. An investigation shows that of six balls of this material five were found to be infected with the tetanus bacillus. The mortality records show that in two years 2902 deaths from tetanus were registered. Of this number 2430 occurred in the first year of life. That death was due to infection through the umbilicus was made more certain by a special investigation of 141 deaths by tetanus in the district of Havana, 131 of which occurred in the first year and ten in the second year of life. The remedy which the board has adopted is the distribution of sterile

ligature material to the poor throughout the island with information as to the danger of using material of doubtful quality for ligatures. The distribution of sterile ligatures in the city of Havana was followed by a fall of the mortality from this disease from 64 to 38 in 1902 and from 38 to 33 in 1903.

The Conservancy of Potable Waters.

Little attention has hitherto been given to the protection of rivers and lakes in the United States from pollution. But the constantly recurring epidemics in cities and villages, traceable to the infection of the drinking waters, are beginning to excite a much-needed public interest in the subject. The matter was brought to the attention of the International Engineering Congress, when the fact was brought out that 75 per cent. of the 28,000,000 people living in cities discharge their sewage into inland waters, 23 per cent. into the sea or tidal waters, and only 4 per cent. maintain sewage purification plants. Several States have adopted more or less stringent laws against the pollution of running streams and lakes and if the present agitation continues the time is not distant when all urban populations will be compelled to maintain effective disinfecting plants.

New Tax on Immigrants.

The enormous and still increasing number of immigrants to this country is beginning to excite the interest of the public authorities. It is estimated that at least 1,000,000 immigrants will come into the United States during the fiscal year. This number will break all former records. It is learned by agents of the Government who are stationed at the ports of embarkation that foreign governments encourage in various ways the emigration of the criminal classes and those who are likely to be a public charge. This opinion is confirmed by observations made at the great immigration depôts in this country. The result is that the President will recommend to the next congress that the per capita tax on all immigrants be raised to $25 with a view to reduce the number of undesirable immigrants.

Disease due to Electricity.

An interesting observation has been made by Dr. Millener of Buffalo in regard to a disease that has appeared among workers in power-houses. These houses are located at Niagara Falls and 19 cases came under his investigation. It appears that in the case of persons whose employment brings them into the immediate presence of high voltage, alternating current generating or transforming machines, there uniformly result a grave disturbance of the digestive organs, loss of appetite, distress after eating, and whitening of the complexion almost to the colour of chalk. He attributes the cause to the chemical influence of either electric rays or some ray unknown as yet.

July 31st.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Period of Study for Indian Medical Students.

THE proposal to increase the period of study for medical students in the Calcutta School from five to six years has been under consideration for some time and was fully discussed at a recent meeting of the University. It was decided, however, to let matters remain as they are. Upon the prospect of an additional year's work a certain section of native medical men, supported by a limited portion of the native press, has been recommending students to go to Japan to study medicine rather than to go to Europe or to remain in Calcutta. One reason given for this advice is the reputed cheapness of study and of living in Japan, while at the same time it is argued that the education is equally good. It is forgotten that students who do not take qualifications recognised by the Government have naturally to shift for themselves as best they can in various forms of private practice. That a certain section of the native press should support such a proposal is not altogether astonishing and it is taken advantage of to attempt a sort of rebuff to British and European medical pretensions. In fact, the proposal was very inadequately considered on its merits and was chiefly made use of as a political move. It is poor patriotism, however, on the part of the Bengali "nation" to sacrifice its medical students for the sake of a very doubtful political snub.

The Plague Epidemic.

The plague epidemic has so far declined that there were only 1742 deaths reported for the week ending July 8th. Of this number the Punjab returned 1112, Bombay Presidency 321, Burma 157, Bengal 61, and the United Provinces 28. The Central Provinces, Central India, and Rajputana are said to be free but this is very doubtful. The great outcry and the disturbances which are raised from time to time about plague are almost invariably about measures and not from fear of the disease. During the past year all the usual religious fairs have been held and the dangers of plague have not diminished the numbers attending them. A warning was issued but there was no prohibition. In the Magh Mela at Allahabad only two cases of plague were reported. In the Dikhanti fair at Hardwar no epidemic disease was discovered and the same is reported of the Dadri fair at Ballia where 750,000 persons attended. It is possible that these fairs being held out of doors rather improve the health of the pilgrims and except for cholera the dangers of disseminating disease are comparatively slight. For the six months of plague in Rangoon there have been 1583 deaths and the expenditure has been Rs. 1,12,285. The disease, however, is still claiming a few victims and several schools have been recently attacked. In Calcutta there have been over 7000 deaths during the same period—not a large proportion compared to its size—and as far as can be gathered the expenditure has been very much less. It is reported that Dr. Martin and the officers engaged in investigating the etiology of plague will remain in India until October. They are now engaged in research work in Bombay.

Mortality in the Bombay Presidency.

The report of the sanitary commissioner for the Bombay Presidency for the year 1904 shows an unhealthy state in this province. The deaths exceeded the births by 115,000. In the previous year the deaths were in excess by 234,000, so that the province has decreased in population in two years by 350,000. It is estimated that since plague first broke out in 1896 the population has diminished by 1,150,000, and that as plague deaths have accounted for 1,060,000 there are other unfavourable causes at work. To those who know how plague is reported the obvious explanation is that these deaths have been largely under-estimated. It is noted that in Ahmedabad the infantile mortality is 550 out of every 1000 registered births.

Vaccination in Assam.

Vaccination in Assam seems to be carried on with earnestness and vigour as operations have increased 7 per cent. and one vaccination is performed for every 20·5 persons, whereas the rate in Bengal is 1 to 27. Amongst some of the hill tribes opposition exists to vaccination and in some of the large valleys inoculation is largely practised. The Shillong vaccine depôt is said to have supplied excellent lymph. The percentage of reported successes is put at 98·8. In 11 towns only is vaccination compulsory and it is estimated that in these 71 per cent. of the infants are protected.

July 21st.

Medical News.

VICTORIA UNIVERSITY OF MANCHESTER.—At examinations held in the Faculty of Medicine in July the following candidates were successful:—

FINAL EXAMINATION.

Part I.—Daniel Dougal, Philip Ferguson, Jane A. Fleming, C. L. Franklin, R. F. S. Green, J. T. B. Hall, Cecil Hibbert, J. B. Macalpine, R. H. Mercer, F. R. Parakh, G. P. Porter, A. E. Quine, W. H. Ross, H. G. Ward, J. S. Webster, Edgar Wharton, W. A. Wheeldon, A. W. T. Whitworth, and William Wilson.

Part II.—Herbert Ainscow, B. M. Bennett, Frank Boothroyd, T. M. Bride, W. J. Cox, *C. M. Craig, W. R. Douglas, W. B. Hill, Lawrence Kilroe, A. J. Landman, *J. D. Marshall, G. C. Mort, Robert Ollerenshaw, H. B. Pare, Ethel M. Phillips, Joseph Rickards, Leonard Thorp, Douglas Wardleworth, and *S. R. Wilson.

* With honours.

SECOND EXAMINATION.

A. Anatomy and Physiology.—John Allen, Elsie Brown, J. F. Dow, A. K. Estock, Edward Gandy, J. L. Moir, and H. V. White.

B. Materia Medica and Pharmacy. J. A. Bateman, R. J. Batty, T. B. Bolton, Norman Booth, C. G. Brentnall, C. H. Broomhead, George Crawshaw, W. C. Denniston, H. A. Dunkerley, Frances M. Huxley, F. F. Laidlaw, R. K. Lomas, W. P. Marshall, W. W. Martin, John Morley, Alice Oberdorfer, T. M. Popple, James Ramsbottom, J. R. Rigg, M. C. Skillern-Lawrence, H. E. R. Stephens, John Thompson, R. B. Thompson, W. W. Uttley, and T. G. Williams.

The undermentioned candidates for the degrees of Bachelor of Medicine and Bachelor of Surgery were presented to, and admitted by, the Vice-Chancellor, Dr. A. Hopkinson, on July 27th. The presentations were made by Professor R. B. Wild:—

Colin M'Kean Craig, John Dodds Marshall, and Sidney Rawson Wilson, each second-class honours; Herbert Ainscow, Bertram Marriott Bennett, Frank Boothroyd, Thomas Milnes Bride, William Joseph Cox, William Robert Douglas, William Bertram Hill, Lawrence Kilroe, Abraham Judah Landman, George Cecil Mort, Robert Ollerenshaw, Henry Burton Pare, Ethel Margaret Phillips, Joseph Rickards, Leonard Thorp, and Douglas Wardleworth.

UNIVERSITY OF EDINBURGH.—The following is the official list of passes at the recent professional examinations for degrees in medicine and surgery:—

First Professional Examination.—D. C. Adam, David Aiken, R. J. Allsopp, Fergus Armstrong, T. H. Balfour, G. E. K. Branch (with distinction), J. A. Browne, B.A., O. S. Bullock, J. R. Bullman, W. L. Burgess (with distinction), B. N. Burjorjee, G. L. Cawkwell, J. J. P. Charles, A. Dumas Child, W. F. Christie, Gladys H. Cook, James Crocket, J. M. Dalzell, Lucy E. Davies, R. W. Davies, W. N. Davies, Jemima B. Dickie, John K. M. Dickie, Adelaide A. Dreaper, J. W. C. Drever, William Dunlop, A. L. Dykes, J. M. Elliot, A. M. Elliott, Euphemia L. Farmer, B.A., H. G. Feltham, W. C. Fragoso, F. E. Fraser, Mary M. Gardner, G. H. Garnett, A. W. Gill, V. H. Gordon, W. T. Graham, E. S. B. Hamilton, H. F. Hamilton, Robert Hamilton, R. C. Harkness (with distinction), John Henderson, B. J. O. Hoare, R. L. Hughes, G. R. Inglis, Flora R. Innes, Hannah M. Irving, B.Sc., H. E. Johnson, J. V. Karve, R. R. Kerr (with distinction), G. E. King (with distinction), C. G. Kurien, J. M. Lawl, A. J. B. Leckie, Janet Leiper, H. E. A. Lemerle, W. R. Logan, Mary Low, M.A., W. H. Lowe, R. C. Lowther, W. G. M'Afee, A. D. MacArthur, A. J. M'Connell, P. A. M'Cool, William Macdonald (with distinction), Thomas M'Fetridge, R. B. Macfie, Mary E. B. Macilwaine, James Mackail, M.A., William M'Kie, G. V. T. M'Michael, R. D. M. Macpherson, C. G. Marais, T. H. R. Mathewson, William Messer, R. W. Miller, A. M. Minford, John Montgomery, J. M. Moyes, James Ong, M.A. (with distinction), J. E. R. Orchard, J. E. T. Oxley, J. J. Pace, H. F. Panton, Hugh Paterson, Ella F. Pringle, N. D. Pringle, Myfanwy D. Rees, D. G. Robertson (with distinction), James Robertson, Dermid M. Ross, William Ross, M.A., John M. Scott, K. R. G. Shah, Kerr Simpson, J. C. Smith, M.A., William Stevenson, C. P. A. Stranaghan, R. K. S. Sutherland, James Swan, Arthur L. Taylor, J. A. Thompson, J. G. Thomson, M.A., W. S. Thomson, L. J. Wallis, Allan Watson, Joseph C. Watson, J. P. Whetter, Seymour Williams, John Wilson, D. W. Woodruff, G. G. Wray (with distinction), and Margaret C. Young.

Second Professional Examination.—J. L. Annan, J. P. Berry, H. W. Binks, J. A. Brand, E. A. Brummitt, P. D. Cameron, W. D. Coghill, Theodore Craig, G. H. Dart, Margaret E. Davidson, C. H. Derksen, Thomas Derrick, C. A. A. Dighton, Joanna M. F. Drake, V. L. Evans, J. Letitia D. Fairfield, W. P. Ferguson, M.A., B.Sc., Thomas Fraser, Hester M. Henderson, W. S. Heron, A. M. Hewat, Matthew Heyns, W. P. Holden, St. G. M. L. Homan, Lloyd Hughes, J. A. Jamieson, H. C. Johnston, W. D. S. Johnston, A. W. Kendall, J. S. Kinross, A. P. Lee, Cecil R. Letham, H. Bruce Low, C. W. L. Lithgen, G. J. Luyt, B.A. (with distinction), L. G. M'Cune, W. S. M'Cune, Thomas M'Ewen, R. J. A. Macmillan, D. J. M'Rae, C. J. van der Merwe, J. A. Morris, Ara G. Murchison, A. T. Paterson, O. E. Powell, Barbara Richardson, C. L. Digby Roberts, A. H. M. Robertson, R. L. Scott, Frederick Shannon, H. C. Simpson, J. T. Simson, Thomas Smyth, Alice M. Thompson, Eleanor M. Thompson, H. B. Thomson, L. R. Thomson, A. E. Turnbull, A. M. Vick, Helen M. Wakefield, R. N. Wallace, W. C. Whiteside, G. S. Williamson, and E. D. Wilmot.

Third Professional Examination.—Alfred Arthur, R. C. B. Atkinson, M.A., R. G. A. Bagnall, C. R. M. Baker, M. M. Sujjad Beg, Mary Brown, Edward Burnet, B.A., Richard Davidson, Pollok Donald, E. W. Dyer, J. G. Fleming, F. S. B. Fletcher, F. H. Somers Gardner, K. N. Ghosh, G. H. R. Gibson, John Gilmour, W. H. Gowans, D. K. Henderson, F. O. Inglis, S. B. Legge, J. P. Lowson, M.A., F. J. Luck, W. O. S. M'Gowan, J. B. Mackenzie, R. P. M'Morland, George M'Mullan, W. J. Macnab, John Mathewson, M.A., H. L. Morrow, Janet M. Murray, M.A., A. S. Paterson, A. M'Tier Pirrie, C. S. U. Rippon, W. G. Rivers, Thomas Robertson, Æneas Rose, M.A., Frank Ross, W. S. Stevenson, G. H. Stoffberg, H. G. Sutherland, J. A. Taylor, E. W. Vaughan, A. S. Walker, F. E. Wall, R. M. Wishart, and A. F. Wright.

Third Professional (New Regulations—Pathology only).—D. M. Barcroft, F. G. H. R. Black, Frank Blamire, R. D. Clayton, J. H. Lamb, John Macdonald, G. B. Macgregor, G. D. M'Ivor, Kenneth M'Murtrie, J. M. M'Phail, Jamesina J. Marr, C. J. Milne, J. E. Murray, A. J. P. Nowell, J. L. H. Paterson, H. B. Porteous, Claude Pycroft, Graham Robertson, J. M. Ross, Z. M. H. Ross, Elsie B. Saunders, Subrata Chunder Sen, and W. O. Welply.

FOREIGN UNIVERSITY INTELLIGENCE.—*Baltimore (Johns Hopkins University):* Mrs. Florence R. Sabin, M.D., has been appointed Assistant Professor of Anatomy.—*Chicago (Rush Medical College):* Dr. John B. Murphy of the North-Western University Medical School has been appointed Professor of Surgery.—*Florence:* Dr. E. Filippi has been recognised as *privat-docent* of Experimental Toxicology.—*Greifswald:* Dr. Johannes Sobotta of Würzburg has been elected to the chair of Anatomy, vacated by the retirement of Dr. Solger.—*Groningen:* Dr. de Vries Reilingh has been recognised as *privat-docent* of Physio-therapeutics.—*Halle:* Dr. Gabriel Anton of Gratz is expected to succeed the late Professor Wernicke in the chair of Psychiatry.—*Innsbruck:* Dr. Bernhard Mayrhofer of Linz has been appointed Extraordinary Professor of Odontology.—*Leipsic:* Dr. Hans Steinert has been recognised as *privat-docent* of Internal Medicine.—*Naples:* Dr. Rosario Buccheri has been recognised as *privat-docent* of the Surgery of Children.—*New York (Post-Graduate School):* Dr. Samuel W. Bandler has been appointed Assistant Professor of Gynæcology.—*Padua:* Dr. Ettore Ravenna has been recognised as *privat-docent* of Pathological Anatomy.—*Rome:* Dr. Samuele Sereni has been recogised as *privat-docent* of Histology.—*Rostock:* Dr. Hermann Brüning of Leipsic has been recognised as *privat-docent* of Children's Diseases.—*St. Petersburg (Military Medical Academy):* Dr. A. Redlich has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Strasburg:* Dr. Gustav Schickele has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Tokio:* Dr. Elwin Baelz, who taught medicine in the University for 25 years, most of the present generation of Japanese medical men having been his pupils, has now returned to Stuttgart, his birthplace. He had a great "send off," both by Japanese and by the English residents. The Emperor conferred upon him the Grand Cross of the Rising Sun.—*Turin:* Dr. Filippo Carta has been recognised as *privat-docent* of Surgery.—*Vienna:* Professor Nothnagel's chair has been declined by Professor Friedrich Kraus, Director of the Second Medical Clinic in the Berlin Charité. The selections for the chair of Hygiene, which has now been vacant for three years are: (1) Dr. Arthur Schattenfroh of the Vienna Institute of Hygiene, (2) Professor Prausnitz of Gratz, and (3) Professor Lode of Innsbruck.

A RUSSIAN MEDICAL EDITOR AND HIS COLLEAGUES.—As is known, the editor of the *Journal of the Pirogoff Society of Medical Men* has been cited to answer for the appearance in the journal of articles not allowed by the censor. The provincial medical practitioners of a large number of districts have addressed the Procureur of the Moscow judicial circuit saying that they as contributors to the journal desire to be included in the indictment to show "their solidarity with the editor."

THE WATER-SUPPLY OF MORTEHOE AND WOOLLACOMBE.—The new water-supply for Mortehoe and Woollacombe in Devonshire was inaugurated on August 1st. The new supply is an extension of the Ilfracombe undertaking, being connected to the Ilfracombe mains by four and a half miles of iron pipe. The cost of the scheme is about £7000, exclusive of £2000 which will be required for the filter beds.

HIGH DEATH-RATES IN CHILI.—Mr. Rowley, acting British Consul-General at Valparaiso, in his report for 1904, just received at the Foreign Office, states that the mortality per 1000 was 55 in Talca, 54 in Chilán, 47 in Concepcion, 46 in Serena, 45 in Valparaiso, 43 in Curicó and Talcahuano, 38 in Santiago, and 35 in Antofagasta.

SEWAGE DISPOSAL AT TAVISTOCK.—A Local Government Board inquiry was held at Tavistock in Devonshire on August 2nd, respecting the application of the urban district council for sanction to borrow £6250 for the purposes of sewerage and sewage disposal.

TEIGNMOUTH HOSPITAL.—As a result of a recent fête the sum of £200 has been raised for the Teignmouth Hospital.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Factories and Workshops Legislation.

In the last days of the session an important private Members' Bill was introduced with the object of amending the law relating to factories and workshops. It was brought in by Mr. TENNANT, Mr. BUXTON, Sir CHARLES DILKE, Sir JOHN STIRLING-MAXWELL, Mr. BURNS, Mr. TALBOT, Mr. MCKENNA, and Mr. HALDANE. The promoters realised, of course, that no progress could be made this year but now that the text has been issued as a Parliamentary paper the public interested will be able to consider the proposals and from the Parliamentary point of view that is helpful. It is pointed out in a memorandum printed with the Bill that the object of the first clause is the improvement and enforcement of the law relating to the sanitary condition of all places to which work is taken by outworkers. It is proposed to treat all such places, unless specially exempted by the Secretary of State, as

if they were workshops, so far as concerns the provisions of the Factory Act and the Public Health Acts which relate to sanitation and inspection. It is also proposed to extend to the giver-out of work the same responsibility for the sanitary condition of these places as is already placed upon the actual occupier or owner under the existing law. Under this scheme the law will be enforced in the first instance, as at present, by the sanitary inspector. Thus no new official will be introduced, unless the present official makes default, in which case the factory inspector, by virtue of his supervisory control over workshops, will have power to act. The second clause, which also relates to outworkers, is intended to require further precautions with the object of preventing the giving out of clothes to be made, cleaned, or repaired on premises where there is infectious disease. The Bill contains several new requirements with regard to the sanitary conditions of factories and workshops, especially with regard to overcrowding in underground workshops, the provision of adequate window space in new factories and workshops, precautions against injury to eyesight by artificial light, the condition of floors, protection against wet, the provision of lavatories, and the supply of drinking water for workpeople. At present the provision of adequate ventilation is not compulsory except in special cases and for special purposes; it is proposed to make it compulsory everywhere.

HOUSE OF COMMONS.

THURSDAY, AUGUST 3RD.

Overcrowding of Wards for the Insane in a Workhouse.

MR. JOSEPH DEVLIN asked the Chief Secretary for Ireland whether his attention had been called to the overcrowding of the wards for the insane in the Belfast workhouse, due to the fact that the Belfast corporation refused to supply the necessary asylum accommodation for the patients, and whether this overcrowding was denounced by the official inspector of lunacy in December, 1904, who recommended that inexpensive asylum accommodation should be provided for these patients elsewhere; and whether, seeing that in spite of the official recommendation nothing had been done by the corporation in the matter and that the number of these patients at the workhouse was increasing, he would order an inquiry into the subject or cause effective representations to be made to the local authorities with regard to it.—MR. LONG answered: The number of insane inmates of Belfast workhouse has in recent years been greatly reduced by the transfer of such persons to the Belfast district lunatic asylum. Since 1898 the number of insane in the workhouse has been reduced from 436 to 96. In December, 1904, the inspectors of lunatic asylums recommended that inexpensive buildings should be erected in connexion with the asylum for the accommodation of the insane inmates of the workhouse. The necessary buildings are now in course of erection.

The Alleged Harsh Treatment of a Medical Officer.

SIR WALTER FOSTER asked the President of the Local Government Board whether he would explain why a district medical officer of the Aylesbury union after being re-elected for 23 years in succession had now, when 64 years old and eligible in one year for superannuation, been deprived of his appointment; and whether, in view of the Superannuation Act, 1896, he proposed to take any and, if any, what action in the matter.—MR. GERALD BALFOUR replied: Until recently the late medical officer did not reside in his district and hence he was only appointed from year to year. I am not informed why, when an appointment had to be made this year, the guardians preferred to appoint the present holder of the office but it was within their competence to do so if they thought fit. The matter is not one in which I can take any action.

Small-pox in Liverpool.

Colonel PRYCE-JONES asked the President of the Local Government Board whether his attention had been called to the recently published report of the medical officer of health of Liverpool upon small-pox hospitals, in which this officer rejected the conclusions arrived at by the Local Government Board's inspector, Dr. R. J. Reece, that small-pox had been spread by means of these hospitals; and whether, in view of the importance of the question, the Local Government Board proposed to issue any further report or observations on the subject of the Liverpool small-pox hospitals.—MR. GERALD BALFOUR replied: I have seen the report of the medical officer of health. The Local Government Board proposes shortly to address a communication to the Liverpool town council on the subject of its small-pox hospitals.

MONDAY, AUGUST 7TH.

The Medical Profession and the Army.

Dr. E. C. THOMPSON asked the Secretary of State for War what steps had been taken to form a reserve of officers to the Royal Army Medical Corps.—MR. ARNOLD-FORSTER answered: The question of whether it may be possible to form a reserve has been under consideration but no decision has yet been arrived at.

MR. LAMBERT asked the same Minister whether there was a properly trained medical establishment for the balance of any army exceeding 55,000 men taking the field abroad.—MR. ARNOLD-FORSTER replied: The war establishments of the army provide for a considerable portion of the medical staff being civilians. As the numbers of the latter available on mobilisation have not been determined on it would not be practicable to give the honourable Member any precise figures on the subject. I may add that the Army Council is aware that the strength of the Royal Army Medical Corps is not yet adequate and it is making every endeavour to increase it. The experience of the last war showed that we can rely on a large number of highly trained and competent civilian medical officers.

TUESDAY, AUGUST 8TH.

The Nursing of the Sick Poor in Workhouses.

MR. TALBOT asked the President of the Local Government Board whether the order which he had announced to be in preparation with regard to the nursing of the sick poor in workhouses might be expected to be issued before the end of the current year.—MR. GERALD BALFOUR replied: I hope that this may be done.

BOOKS, ETC., RECEIVED.

ALCAN, FÉLIX, 108, Boulevard Saint-Germain, Paris.

Les Tumeurs de l'Encéphale: Manifestations et Chirurgie. Par le Dr. H. Duret, Ex-Chirurgien des Hôpitaux de Paris, Professeur de Clinique Chirurgicale à la Faculté Libre de Lille. Price Fr.20.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Covent Garden, W.C.

A Manual of Veterinary Hygiene. By Colonel F. Smith, C.M.G., Army Veterinary Department, Fellow of the Royal College of Veterinary Surgeons, Fellow of the Institute of Chemistry. Third edition, rewritten. Price 15s. net.

BROWNE AND NOLAN, LIMITED, Dublin.

The Medical Profession. By M. Foster Reaney, M.B. Lond., M.R.C.S., L.R.C.P., D.P.H. Lond., I.M.S. The Carmichael Prize Essay for 1904. Price 3s.; post-free 3s. 3d.

CHURCHILL, J. AND A., 7, Great Marlborough-street, W.

Medical Officers of Schools Association. On the Hours of Sleep at Public Schools. Based on an Inquiry into the Arrangements existing in Forty of the great Public Schools in England, and others in the U.S.A. A Paper read before the Association on May 11th, 1905, by T. D. Acland, M.A., M.D. Oxon., F.R.C.P., Physician to St. Thomas's Hospital, and Consulting Physician to the Hospital for Diseases of the Chest, Brompton. Price 1s.

DEACON, CHARLES WILLIAM, AND CO., Charing Cross Chambers, Duke-street, Adelphi, W.C.

"Always." By S. Eldom. Price 2s. 6d.

FISCHER, GUSTAV, Jena.

The Accessory Sinuses of the Nose and their Relations to Neighbouring Parts. Illustrated by Fifteen Coloured Plates. By Dr. Gustav Killian, Professor of Laryngology and Rhinology in the University of Freiburg i B. Translated by D. R. Paterson, M.D., M.R.C.P., Assistant Physician in Charge of Throat Department, Cardiff Infirmary. Price M.25.

Die Infektionswege bei der Fütterungstuberkulose. [Aus dem Pathologisch-anatomischen Institut (Prof. A. Weichselbaum) in Wien.] Von Dr. Julius Bartel, Assistent am Institut. Abdruck aus dem Klinischen Jahrbuch, Vierzehnter Band. Price M.3.20.

Atlas der Menschlichen Blutzellen. Von Dr. Artur Pappenheim. Erste Lieferung. Tafel I.–XII. Price M.16.

Die Therapie der Magen- und Darmerkrankungen. Von Dr. Carl Wegele, Besitzer einer Anstalt für Magenkranke in Bad Königborn (Westfalen). Dritte gänzlich umgearbeitete Auflage. Price M.7; geb., M.8.

FISHMONGERS, WORSHIPFUL COMPANY OF, Fishmongers' Hall, Adelaide-place, London Bridge, E.C.

Experiments and Observations on the Vitality of the Bacillus of Typhoid Fever and of Sewage Microbes in Oysters and other Shellfish. Investigations on behalf of the Worshipful Company of Fishmongers, London, by E. Klein, M.D., F.R.S. Price not stated.

GOODALL AND SUDDICK, LIMITED, Cookridge-street, Leeds.

Report upon the Surgical Treatment of the Non-Malignant Diseases of the Stomach. Presented to the Surgical Section of the British Medical Association, at Leicester, July, 1905, at the opening of the Discussion, by B. G. A. Moynihan, M.S., F.R.C.S., Leeds.

GREEN, WILLIAM, AND SONS, Edinburgh and London.

A Contribution to the Pathology of the Endometrium. By Jessie M. Macgregor, L.R.C.P. & S., M.D., Junior Acting Medical Officer, Edinburgh Hospital for Women and Children, Lecturer on Gynæcology in the Edinburgh School of Medicine of the Royal Colleges. Price not stated.

HÖLDER, ALFRED, I., Rotenturmstrasse, 13, Wien.

Die Nebenhöhlen der Nase. Nach photographischen Aufnahmen 124 Präparate in Natürlicher Grösze dargestellt. Im Auftrage der Ungarischen Akademie der Wissenschaften. Von Prof. Dr. A. Onodi, A.O. Professor der Rhino-Laryngologie an der Universität in Budapest, Mitglied der Ungarischen Akademie der Wissenschaften. Price not stated.

LEHMANN, J. F., Heustrasse, 20, München.

Lehmann's Medizinische Atlanten. Band V. Atlas typischer Röntgenbilder vom normalen Menschen, ausgewählt und erklärt nach chirurgisch-praktischen Gesichtspunkten, mit Berücksichtigung der Varietäten und Fehlerquellen, sowie der Aufnahmetechnik. Von Dr. med. Rudolf Grashey, Assistenzarzt am chirurgischen Spital links d. Isar in München. Price M.16.

LONG, JOHN, 13 and 14, Norris-street, Haymarket, London.

Glimpses of the Ages, or the "Superior" and "Inferior" Races, so-called, discussed in the Light of Science and History. By Theophilus E. Samuel Scholes, M.D., &c. Price 12s. net.

MORING, ALEXANDER, LIMITED, THE DE LA MERE PRESS, 32, George-street, Hanover-square, W.

Crystal Gazing: Its History and Practice, with a Discussion of the Evidence for Telepathic Scrying. With an Introduction by Andrew Lang, M.A., LL.D. By Northcote W. Thomas, M.A. Price 3s. 6d. net.

Thought Transference: a Critical and Historical Review of the Evidence for Telepathy, with a Record of New Experiments, 1902–1903. By Northcote W. Thomas, M.A. Price 3s. 6d. net.

MURRAY, JOHN, Albermarle-street, W.

The Boy and His School: What it Can and What it Cannot Give Him. By Robert L. Leighton, Headmaster of the Bristol Grammar School. Price 2s. 6d. net.

NEW SYDENHAM SOCIETY, London (Agent, H. K. LEWIS, 136, Gower-street, W.C.).

An Atlas of Illustrations of Clinical Medicine, Surgery, and Pathology. Compiled for the New Sydenham Society (A Continuation of the "Atlas of Pathology"). Chiefly from Original Sources. Fasciculus XXIII. Being XV. of The Clinical Atlas. Drug Eruptions. Plates CXLV. to CLII. Price to non-subscribers, half-a-guinea.

OFFICE OF THE SUPERINTENDENT OF GOVERNMENT PRINTING, INDIA, 8, Hastings-street, Calcutta.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. New Series. No. 17. Snake-venoms in Relation to Haemolysis. By Captain George Lamb, M.D., I.M.S. Price Annas 6 or 7d.

PATON, J. AND J., 143, Cannon-street, E.C.

Paton's List of Schools and Tutors. (An Aid to Parents in the Selection of Schools). Eighth Annual Edition, 1905-1906. Price 1s. 6d.

PENTLAND, YOUNG J., Edinburgh and London.

The Nervous Affections of the Heart. Being the Morison Lectures delivered before the Royal College of Physicians of Edinburgh in 1902 and 1903. By George Alexander Gibson, M.D., D.Sc. Edin., LL.D. St. And., F.R.S. Edin. Second edition. Price not stated.

REBMAN, LIMITED, 129, Shaftesbury-avenue, W.C.

A System of Physiologic Therapeutics. Edited by Solomon Solis Cohen, A.M., M.D., Professor of Clinical Medicine in Jefferson Medical College. Volume XI. Serum Therapy, Organotherapy, Radium, Blood-letting, Therapeutics, X Ray Therapy, and Index-digest to all volumes. Price 12s. 6d. net. Price of the complete work in 11 volumes, £6 6s. net.

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SAUNDERS, W. B., AND CO., Philadelphia and London.

Addresses and Other Papers. By William Williams Keen. M.D., LL.D., F.R.C.S. (Hon.), Professor of Surgery, Jefferson Medical College, Philadelphia. Price 17s. 6d. net.

UNIVERSITY CORRESPONDENCE COLLEGE, Burlington House, Cambridge (London Office, 32, Red Lion-square, Holborn).

The University Tutorial Series. Matriculation Directory. No. XL., June, 1905. With Articles on Text-books. Price 1s. net.

VIGOT FRÈRES, 23, Place de l'École de Médecine, Paris.

Le Celluloid en Orthopédie. Par le Docteur L. de Mélier de Labarthe, Ancien Interne des Hôpitaux de Berck. Price Fr.6.50.

L'Evaluation des Incapacités Permanentes Basées sur la Physiologie des Fonctions Ouvrières des Diverses Parties du Corps. Par le Dr. Ch. Remy, Professeur Agrégé à la Faculté de Médecine de Paris. Rapport présenté au Congrès Médical International des Accidents du Travail. Liége, 1905. Price Fr.1.50.

WRIGHT, JOHN, AND CO., Bristol. (SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED, London.)

Natural Science in Hygiene; or the Life-history of the Non-Bacterial Parasites Affecting Man. For the Use of Students of Public Health. By James Rodger Watson, M.A., B.Sc., M.D. Edin., Diplomate in Public Health (Univ. of Camb.). Price 1s. 6d. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ANDERSON, WILLIAM JAMES, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed District Medical Officer and Public Vaccinator by the Helston (Cornwall) Board of Guardians, and has also been appointed Certifying Surgeon under the Factory and Workshop Act for the Helston District of the county of Cornwall.

BLUMFELD, J., M.D. Cantab., has been appointed Honorary Anæsthetist to St. Mary's Hospital, Paddington, W.

BONNEY, VICTOR, M.S., M.D., B.Sc. Lond., F.R.C.S., M.R.C.P., has been appointed Emden Research Scholar to the Cancer Investigation Department of the Middlesex Hospital.

BUSHNELL, F. G., M.D. Lond., has been appointed a Vice-president of the Devon and Cornwall Sanatorium for Consumptive Poor.

ECKERSLEY, EDWARD ARTHUR, M.B., C.M., has been appointed Clinical Assistant to the Hospital for Diseases of the Skin, Blackfriars, S.E.

EVANS, THOMAS, M.D., has been appointed Clinical Assistant to the Hospital for Diseases of the Skin, Blackfriars, S.E.

FIELDEN, E., M.B., M.S. Durh., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Bracknell District of the county of Berks.

GOLDIE, E. M., M.D. Edin. has been appointed Visiting Surgeon to the Royal Merchant Seamen's Orphanage, Snaresbrook.

POOLEY, J. M., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer and Public Vaccinator for the Nettlebed District of the Henley Union.

ROBINSON, FRANK, M.D., D.P.H., has been appointed Deputy Medical Officer of Health of the City of Westminster.

RODERICK, H. B., M.D., B.C. Cantab., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

WILLIAMS, ARNOLD WINKELRIED, M.B., C.M., D.P.H. R.C.P.S., has been appointed Clinical Assistant to the Hospital for Diseases of the Skin, Blackfriars, S.E.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BOURNEMOUTH, ROYAL VICTORIA HOSPITAL.—House Surgeon. Salary £100 per annum, with board and lodging.

BRADFORD ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

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Births, Marriages, and Deaths.

BIRTHS.

PAYNE.—On August 1st, at Melville, Shepherdswell, the wife of Edward Bruce Payne, M.R.C.S., L.R.C.P., of a son.

POLLARD.—On August 4th, at the Royal Naval Hospital, Chatham, the wife of Inspector-General E. R. H. Pollard, R.N., of a daughter.

SEALE.—On July 5th, at Oakfield, Ceres, C. C., the wife of E. A. Seale, M.D., of a daughter.

DEATHS.

HEATH.—On August 8th, at Cavendish-square, Christopher Heath, F.R.C.S., aged 70 years.

OGLE.—At the Vicarage, Highgate, on August 8th, John William Ogle, M.D. Oxon., F.R.C.P. Lond., of 96, Gloucester place, Portman-square, London, consulting physician to St. George's Hospital, aged 81 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

DIFFICULTIES UNDER THE VACCINATION ACTS.

To the Editors of THE LANCET.

SIRS,—In your note on the letter from your correspondent "A" you are in error in saying that "the public vaccinator gets no fee unless he actually does vaccinate the child." A minimum fee of 1s. is due to him for every name inserted in the "H" forms sent him by the vaccination officer whether he vaccinates or not. As regards your correspondent "A," I advise him to acquaint himself with, and comply with, the Vaccination Acts; he will then increase his fees, will serve his country better, and there will be no excuse for anyone to call at his patients' houses. Thus he will not be worried with exaggerated and often untrue stories about the public vaccinator and, in addition, he will not find it necessary to rush into print to air his ignorance about the above much-maligned individual. Your correspondent is like all the other grumblers, wrong in his law.

I am very tired of the complaints which appear from time to time against public vaccinators and I have come to the conclusion that in nine cases out of ten they are uncalled for. I feel sure if your correspondent would inquire thoroughly into his complaint he would find either that the actions stated were justified, or had been exaggerated, or nothing of the kind happened. He has apparently only one side of the story.

It is very common for parents to lie to a public vaccinator when he makes his statutory call, offering various excuses about their children. These parents do not wish their children vaccinated and so they will lie to their own doctor. Then some private practitioners seem to adopt the "dog in the manger" attitude and say we cannot vaccinate and no one else shall. In other cases when they cannot, or will not, pay for the postponements (if any) and operation and the public vaccinator is the only one who is able to obtain a fee, the private practitioner grudges him it. I inclose some correspondence which shows how some of these complaints turn out when sifted.

I am, Sirs, yours faithfully,

Margate, August 7th, 1905. J. J. HEMMING.

*** We are quite aware of provision (a) of Article 3, Section 1, and of Section 2 of the same article of the Vaccination Order, 1898, but the minimum fee of 1s. is not a fee for visiting.—ED. L.

A WARNING TO MEDICAL MEN, PRIVATE HOMES, AND INSTITUTIONS FOR MENTAL CASES.

To the Editors of THE LANCET.

SIRS,—Medical men and others who carry on homes should be very much on their guard just now for there is going about in the London suburbs a most cunning and clever rogue, who has been, and is now, defrauding a large number of medical men and others by a system of the "confidence trick." He is a thin, undersized, consumptive-looking man, of sad and melancholic aspect, high cheek bones, pointed chin, grey eyes, small brownish moustache, and a dirty ivory complexion. He is dressed in black as though in mourning. His story is that he is looking out for a home for his child of ten who is mentally deficient, his two other children being quite bright. He has recently lost his wife and has just come from India where he holds a good position on the Indian railways. He goes into full details about his child and talks freely about epilepsy, retarded development, and hereditary taint. There is nothing whatever to suggest any suspicion about the man up to this stage. He has been recommended to visit the home by a London specialist for children; he is highly pleased with the place, just the ideal he has been looking for; no money is to be spared for the child's comfort. The terms asked are £200 a year. He leaves the house and will write. A letter comes next morning on stamped addressed paper from a house in a fashionable West-End street saying he has decided to place the child in the home and that he will call early that morning. As he is going out to India in a few days he will pay the year's fees in advance. He presents a cheque for £250; quite a mistake, he intended to write £200; however, it can easily be rectified: the owner of the home can give him a cheque for the £50. He was so nice over it and it all appeared so genuine—the worry of leaving his dear child and going out to India. Several addresses were given of friends in case of the child's illness, &c., and stating the train the nurse would bring the child by, he took his leave. A few hours after, suspicions being aroused, the cheque was taken to London and presented at the bank, where it was pronounced a forgery. A wire was at once sent to the bank to stop payment upon the cheque given for the £50, but it was too late, for although "crossed" it had been cashed by a tradesman. The detective department at Scotland Yard was informed at once and from the account given of the man the officials there state that he has been wanted by them for a long time as a clever rogue and forger. Should any reader happen to receive a call from this gentleman it is to be hoped that he will get him to pay a second call and in the meantime acquaint the authorities at Scotland Yard. The house in the West-End he wrote from is empty and has been a long time.

I am, Sirs, yours faithfully,

August 7th, 1905. VACUUS VIATOR.

*** If "Vacuus Viator," in addition to crossing his cheque, had marked it "not negotiable" the tradesman would probably have refused to cash it; or if he had cashed it he would have done so at his own risk and would have rendered himself liable to repay the amount. The words "not negotiable" on a cheque are a notice to the transferee that he must inquire into the title of his transferer and rely on his endorsement, as the transferee of a "not negotiable" cheque cannot have a better title to it than that which the person from whom he took it had. It is therefore a good rule to cross all cheques and to mark them "not negotiable."—ED. L.

A CURIOUS SUPERSTITION.

To the Editors of THE LANCET.

SIRS,—Referring to a letter in your issue of June 3rd, which I have just seen, under the above heading I may say that it is a common remark of the old woman in rural districts of England to say in a knowing way, if a man should be under the care of a medical man during his wife's pregnancy, "Ah! he is breeding for her," or, "Well, you see, doctor, his wife is breeding," implying that the condition of the woman has some occult influence over the health of the husband. If you pursue the inquiry you will find they attribute his illness to abstention from connubial intercourse during this interesting time, which is an assumption unsupported by trustworthy evidence.

I am, Sirs, yours faithfully,

Faversham, August 7th, 1905. F. FITZHERBERT JAY.

CHAULMOOGRA OIL AND SYPHILIS.

To the Editors of THE LANCET.

SIRS,—I should be glad if any of your numerous readers can supply me with information as to the therapeutic effects, action, principle, &c., of oleum gynocardiæ (chaulmoogra oil), especially with reference to the treatment of syphilis. Thanking you in anticipation,

I am, Sirs, yours faithfully,

Dr. Med. JOS. FR. VON CHIPPA

Bad-Hall, Oberösterreich (Upper Austria), August 1st, 1905.

THE RED LAMP AND THE BARBER'S POLE.

To the Editors of THE LANCET.

SIRS,—For some time past I have puzzled over the origin of the red lamp which is placed by some medical practitioners outside their "surgeries" and which at night is often, especially in the suburbs, the only attractive object in the whole road. I have asked one or two medical men about it and they do not seem to know why they use it themselves and I feel sure it would interest many of them to know its history if some one of your numerous readers would tell it. It seemed to me to symbolise blood-letting, but the barber's pole appears to have been used with that signification when the barber-surgeons did that kind of work, for I read that it signified "the which the patient grasped, its spiral decoration in imitation of the bandage, and the basin to catch the blood." I read elsewhere, with regard to the basin, "often with a brass basin at the end of it," and I also remember to have read somewhere that the pole symbolised the "poll" or head (derived from the middle Dutch "pol"—head), but I do not believe this, as the word "pole" seems to have been derived from Anglo-Saxon "pal" or Latin "palus," a stake.

I am, Sirs, yours faithfully,

July 24th, 1905. LUCUS.

HARD WATER AND RHEUMATOID ARTHRITIS.

To the Editors of THE LANCET.

SIRS,—My wife suffers acutely from rheumatoid arthritis in the hip joint and from sciatica. Our water-supply is impregnated with lime. Would removal from the district or a supply of soft water materially facilitate a cure? Everything tried has failed.

I am, Sirs, yours faithfully,

August 8th, 1905. A. M. Z.

*** So far as we are aware no connexion between rheumatoid arthritis and the character of the water-supply has been recognised. As to removal from the district, a warm, dry, and equable climate is a desideratum.—ED. L.

BOVININE AS A DRESSING.

To the Editors of THE LANCET.

SIRS,—Having read the letter under the above title in your issue of August 5th I think it may be worth while to relate my experience of bovinine as a dressing. In the spring of 1904 I had a patient under my care in hospital who was severely burnt on the back. The patient was a woman who in an epileptic fit fell into the fire and had a burn of the third degree from the occiput to the level of the fifth dorsal spine and from the acromial angle on the left side to the middle of the deltoid muscle on the right. When she came under my care she had a clean, granulating wound of irregular shape about 12 by 20 inches in its greatest diameters. I had just read some accounts of the results obtained in America by treating large granulating wounds with bovinine and determined to try it. I dressed the wound daily with bovinine and on three occasions covered different parts of the surface with Thiersch's grafts, dressing them with the bovinine in the same manner as the granulating surface. The grafts took unusually well and the whole surface was completely healed in a far shorter time than I had expected. When the patient left the hospital the whole area that had been burnt was covered with a soft healthy flexible skin and there was no tendency towards cicatricial contraction or deformity. I heard of the patient some months afterwards and there was still no tendency to contraction or breaking down of the new skin. Since then I have

used bovinine in several cases in the treatment of chronic ulcers and think that in all cases it hastened the cure. How exactly the meat extract acts I cannot say but I am inclined to think that it affords a suitable nourishment for the rapidly growing new tissues; certainly in the first case, where I employed skin grafts as well, they took more readily and grew more rapidly than usually. The one thing which appears to be absolutely necessary for the success of this treatment is that the granulating surface should be clean and healthy. I may mention that I did not find the mixture of bovinine with antiseptics (as thymol or iodoform) which are recommended a success.

I am, Sirs, yours faithfully,

Dublin, August 7th, 1905. R. ATKINSON STONEY, M.B. Dub.

Mr. Cecil Revis.—The American quart of 32 ounces was, we believe, referred to but this does not affect the general argument in favour of the production of milk on the rigorously clean lines indicated. The first consideration in regard to milk-supply is surely the public health and not dividends.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.).

TUESDAY (15th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.).

WEDNESDAY (16th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.) Middlesex (1.30 P.M.), Charing Cross (1 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M., National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.).

THURSDAY (17th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.).

FRIDAY (18th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.).

SATURDAY (19th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (14th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—3 P.M. Dr. Davis: Medical Cases.

TUESDAY (15th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Bidwell: Surgical Treatment of Ascites.

WEDNESDAY (16th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Dunn: Tobacco Amblyopia.

THURSDAY (17th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—4 P.M. Mr. Edwards: Surgical Cases.

FRIDAY (18th).—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Common Symptoms of Throat, Nose, and Ear Diseases.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1905, which was completed with the issue of June 24th, and the Title-page to the Volume, were given in THE LANCET of July 1st.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1905 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Stewart's Instruments.)

THE LANCET Office, August 10th, 1905.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation Therm.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Aug. 4	29·49	S.W.	...	118	71	60	61	66	Cloudy
,, 5	29·62	S.W.	...	129	72	60	60	65	Cloudy
,, 6	30·10	S.W.	0·12	119	69	53	56	59	Cloudy
,, 7	29·91	S.	0·05	91	60	59	57	61	Cloudy
,, 8	29·93	W.	...	124	75	59	61	65	Cloudy
,, 9	29·94	S.W.	...	89	67	59	57	61	Overcast
,, 10	29·90	S.W.	0·02	131	72	57	57	63	Fine

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